JPRS 79741

24 December 1981

China Report

AGRICULTURE

No. 180

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 79741

24 December 1981

CHINA REPORT
AGRICULTURE
No. 180

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Further Reforms in Rural Economy Advocated (NONGYE JINGJI WENTI, 28 Oct 81) 1

NPC Deputies Support Tree-Planting Drive (XINHUA, 9 Dec 81) 9

Fujian

Briefs
- Fujian Prefecture Late Rice 10
- Jianyang Prefecture Grain 10

Hebei

Farm Development Program for Heilonggang Region Proposed (Hou Xueyu; HEBEI RIBAO, 2 Nov 81) 11

Bumper Cotton, Grain Harvests in Wuqiao Country Reported (HEBEI RIBAO, 28 Oct 81) 17

Success Reported in Experiments on Maximum Bearing Time for Fruit Trees (Chen Yichao; GUANGMING RIBAO, 10 Nov 81) 19

Jiangsu

Briefs
Country Field Management 20
Jiangsu Prefecture Agriculture 20
Jiangsu Country Agriculture 20

Shanghai

Institute of Animal Husbandry Successes, Ongoing Projects Described
(Wang Ruilin; KEXUE ZHONGTIAN, Sep 81) 21

Shanxi

Briefs
Heshun County Fall Sowing 23
Doubling of Sugarbeet Output 23

Sichuan

Briefs
Hechuan Country Grain Production 24

Yunnan

Increased Procurement of Third Quality Farm Products Urged
(YUNNAN RIBAO, 23 Oct 81) 25

Ins, Outs of Wheat Growing in Yunnan Surveyed
(He Zhaoxing; YUNNAN RIBAO, 28 Oct 81) 27

Briefs
Farm Product Purchase Increases 29

Zhejiang

Greater Emphasis on Ocean Fish, Shrimp Hatching Urged
(ZHEJIANG RIBAO, 27 Oct 81) 30

Briefs
Development of Foodstuff Industry 32
Agricultural Bank Loans 32

II. PUBLICATIONS

Table of Contents of 'ZHONGGUO XUMU ZAZHI' No 4, 1981 34

Table of Contents of 'SENGONG KEJI TONGXUN' No 8, 1981 36

Table of Contents of 'SENGONG KEJI TONGXUN' No 9, 1981 38

HONG KONG MEDIA ON CHINA

Five Measures Outlined for China's Agricultural Development
(Zhan Wu; TA KUNG PAO, 8 Nov 81) 40

ABSTRACTS

AGRICULTURE

DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] No 3, 10 Oct 81 44

AGRICULTURAL RESEARCH

ZHIWU BAOHU [PLANT PROTECTION] No 5, 8 Oct 81 46

FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] No 5, 10 Oct 81 47

NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] No 10, 17 Oct 81, No 11, 17 Nov 81 51

BOTANY

ZHIWU XUEBAO [ACTA BOTANICA SINICA] No 5, Sep 81 53

ENTOMOLOGY

KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] No 5, Sep 81 55

I. GENERAL INFORMATION

FURTHER REFORMS IN RURAL ECONOMY ADVOCATED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 10, 28 Oct 81 pp 3-6

[Article Dated 28 August 1981: "Summary of National Symposium on Agricultural Economic Problems"]

[Text] The National Symposium on Agricultural Economic Problems was held between 20 and 28 August 1981 at Yantai City, Shandong Province. A total of 191 delegates from 105 units attended this symposium. The symposium received a total of 117 academic treatises and investigation reports. This symposium was held by the China Agricultural Economics Society under the auspices of the State Agricultural Commission, and was convened under the direct guidance of the State Agricultural Commission. In order to do a good job of the zoning of agriculture, in addition to carrying out surveys of natural resources, it has also been necessary to conduct surveys of socio-economic conditions, so in the spring of 1980 the State Agricultural Commission organized more than 400 people in research units in institutions of high learning, and in scientific institutes of organizations concerned for a period of somewhat more than 1 year to conduct surveys. These surveys were carried out in 11 selected counties throughout the country (Tongxian, Jiading, Wuxi, Wuxian, Taoyuan, Guanghan, Polo, Luancheng, Hailun, Changji, and Yanchi counties). Surveys were on six topics (agricultural modernization, the structure of agricultural production, comprehensive development of the rural economy, costs and prices of farm products, proper handling of the relationship among the three [the state, the collective, and individuals], and the farm products procurement system). Proceeding from the foundation of these surveys, the symposium integrated the current situation in rural villages nationally, and formed discussion groups to discuss these six topics. In addition, they also discussed the two special topics of the system of responsibility for farm production and agricultural zoning. Now let us present a capsulization of discussions below.

China's rural villages have entered a period of all around economic reform. Since the publication of the CCP Central Committee Document 75, everywhere various forms of a system of responsibility for production have been established including contracting of special endeavors, linking production to the calculation of remuneration, and linking production to the workforce, but contracting production with individual households and contracting jobs with individual households have developed fastest of all. Institution of contracting production with individual households, and contracting jobs with individual households have brought about tremendous changes in all aspects of the rural economy, and have also affected various fields in the superstructure, making people take notice in every way. In the unit discussions, delegates from 13 provinces and municipalities, including those from Henan and Gansu, individually provided briefings on development, experiences and problems in their systems of responsibility for farm production. Some delegates also offered some specific recommendations about current development of the system of responsibility for production.

Everywhere contracting production with individual households and contracting jobs with individual households has developed rapidly. In Gansu and Anhui provinces, for example, such "double contracting" amounts to 80 percent, 60 percent of it being contracting jobs with individual households. In Henan, contracting production with the workforce, contracting production with individual households, and large scale contracting of responsibilities totals 80 percent, and after autumn, greater development will occur. The masses in Henan say, "Contracting of small jobs can't be certain; linking production to the workforce is unsteady; and large scale contracting of responsibilities can't be stopped." In all teams where contracting of production with individual households, or contracting of jobs with individual households has been instituted, the enthusiasm of the masses runs very high and production develops very rapidly. Some "three dependent" production teams got back on their feet within a single year. This year a great flood occurred in Sichuan Province, and commune members where contracting for production with individual households had been done promptly set about straightening up the seedlings and washing them off to reduce losses after the waters had receeded. In other forms such as specialized contracting, linking of production to the calculation of remuneration, and linking production to the workforce, whenever practices accorded with local conditions and the desires of the masses, and when leadership was strengthened, output also increased.

Actual practice has already exceeded Document 75's provisions. Delegates from all over suggested that the Central Committee promptly set forth a new document on the basis of the new situation. They also suggested that farm departments put out guidelines for implementation of various forms of a system of responsibility so that all jurisdiction can follow them.

At the present time in rural villages everywhere, some cadres have mixed feelings about "double contracting." Some are at loggerheads with the masses and will not permit their implementation. Some are unable to stop them so they throw up their hands and have nothing to do with them. There are many reasons for this state of affairs. Satisfactory solutions must be found; there can be no simplistic condemnations.

On other frontlines too, some people lack understanding of the great transformation that is currently underway in rural villages, and everyone is discussing them. In the course of work, some even discriminate against and treat with rejection peasants who practice "double contracting." As a delegate from Gansu said, the Gansu Bank of Agriculture began not to issue loans to production teams practicing the contracting of jobs with individual households. Later on it agreed to the loans, but interest was to be calculated at individual household rates, which were more than 50 percent higher than for loans to production teams under unified operation and unified distribution. Delegates from all over said that to perfect a sound system of responsibility for agriculture, problems that bear upon the internal operation of communes and brigades are fairly easily solved, problems that bear upon supply and marketing, banking, and farm machinery are difficult to solve. Therefore, it is necessary to publicize throughout society the profound economic reforms taking place in rural villages. Once this is properly understood, everyone will come forward to support the transformation.

All forms of the system of responsibility, and particularly "double contracting," have exhibited tremendous vitality and have advanced the development of production. However, there is still a gradual process of adaptation currently among cadre leaders, but among various superstructures concerned, some are still not compatible, and various system of responsibility management systems also require gradual additional improvement. These problems require thoroughgoing investigation and study and a summarization of experiences for smooth development.

Doing a good job of agricultural zoning, gaining an understanding of natural resources and socio-economic conditions everywhere through the country, zoning of agricultural areas, and giving tailored guidance are prerequisites for the development of agricultural production through the adaptation of general methods to local situations. This symposium emphasized discussion of some problems relating to agricultural economic surveys in agricultural zoning work. These included the goals and significance of agricultural economic surveys, the substance of research, and survey methods. Units on special topics also drafted "Elements of Agricultural Economic Survey and Study in County Level Agricultural Zoning," "Agricultural Economics Survey and Study Indicators and How to Figure Them," and a group of statistical charts, which were provided all jurisdictions for their reference. Everyone unanimously agreed that agricultural economics survey and study are major integral parts of agricultural zoning, and that the quality of agricultural zoning work is determined to a large extent by the depth of survey and study of agricultural economic conditions and socio-economic resources. County level agricultural zoning, in order to provide data for the formulation of agricultural development plans and for the guidance of agricultural production, should comprehensively and integratedly study natural, economic, and technical factors related to agricultural production as well as the laws of changes in them. At the present time, agricultural economics survey and study work is still a weak link in China's agricultural zoning, and one that is in need of strengthening. Comrades unanimously proposed: (1) Addition of an agricultural economics unit to the zoning office of the State Agricultural Commission, and a requirement that all echelons of agricultural organizations intensify their agricultural economics survey and study work, promptly reporting to leaders important events and problems; (2) Currently county level agricultural economics survey and study personnel are few in number and poor in quality. It is recommended that the State Agricultural Commission commission relevant institutions to conduct short training courses; (3) Organize and guide agricultural institutions and institutes to conduct rural surveys, and appropriately increase funds for agricultural economics surveys and study in order to assure smooth continuance of survey work.

The most important agricultural economics problem is solution to the problem of material benefits for peasants. As Engels said: The economic relationships in every society are revealed, first of all, in benefits. ("On Housing Problems," "Selected Works of Marx and Engels," Vol 2, p 537). Therefore, simultaneous with our understanding the rural situation, and coming to grips with agricultural zoning, we have to begin with costs and prices of farm products, and study various agricultural economics questions. Results of survey show: (1) For the past 20 years and more, farm product costs have generally risen. Expenditures for materials have multiplied; quantity of labor used and expenditures for human labor have increased to a fairly high degree; and costs have climbed. Survey results compiled for the four counties of Taoyuan in Hunan, Polo in Guangdong, Guanghan in Sichuan, and Jiading in Shanghai show that in a comparison of 1979 with 1965, costs per ton of paddy rice rose from 8.45 to 11.40 yuan, an increase of 34.9 percent; for cotton from 81.97 to 108.47 yuan, a 32.3 percent increase; and for rape, a rise form 24.30 to 33.08 yuan, a 36.1 percent increase. (2) At the present time prices of farm products still tend to be low. According to experimental calculations made on cost survey data by seven units in the Price Administration (average figures for the 3 years, 1977, 1978, and 1979 for material costs and amount of labor being used; value of labor calculated at 1.39 yuan per day; and cost and profit rates calculated at 14.41 percent to 20 percent), the amount below calculated value of existing procurement list prices was: for six kinds of grain, lower by an average 19.68 - 23.41 percent. These included paddy rice, which was 24.09 to 28.39 percent lower, and wheat, which was 36.33 to 39.31 percent lower. Cotton was lower by 8.6 to 12.85 percent. Live hogs were 13.26 to 17.3 percent lower. (3) The comparative prices of industrial and agricultural products and comparative prices of farm goods internally were inequitable. Using the aforestated method of calculation, grain prices were 19.68 to 23.41 percent lower than value, but prices of industrial goods were 20 percent higher than value. In 1978, farmers sold 46 billion yuan worth of farm products and bought 81.04 billion worth of industrial products. As a result of the price scissors, the farmers had to provide the state an accumulated sum of about 30.26 billion yuan, or about one-third the national treasury's revenues. Consequently, the comrades proposed: (1) Efforts to increase scientific farming levels and administration and management levels to increase the labor productivity rate and reduce costs of farm products so that the magnitude of value per unit of product falls. (2) Under the guidance of the planned economy, and in conformance with the laws of value, to make equitable readjustments in farm product prices to further reduce the price scissors. Over the long range, there should be, principally through a lowering of the prices of industrial goods used in agriculture and a lowering of industrial retail prices, together with an increase in the prices of farm products as a supplementary program, gradual achievement of prices that are close to value overall. In order to achieve this objective, from the lowering of industrial costs as the fundamental action, prices of the means of agricultural production and industrial consumption items should be lowered. In the case of plastic sheeting used in agriculture, and in the case of pesticides on which profit margins are overly high, for instance, the market prices should be lowered. On items for which the profit margin is excessively low, such as farm machinery, if costs cannot be lowered for the time being, state subsidies might be resorted to, the ex-factory price remaining the same, but the sale price dropping appropriately. For individual farm products for which the prices are overly low, readjustments should be made. In places where the grain commodity rate is high and the unified procurement base figures are high, there should be suitable reduction in the unified procurement base figures and an increase in the ratio of excess price and negotiated procurement. There should be further reduction in the difference between unified procurement prices and prices paid in excess of quota for grains and oil in a gradual transition to the excess procurement level. (3) The state should support agriculture through public finance, credit, and tax revenues, and through the use of rebates of industrial and industrial profits to increase agricultural income. (4) Reform of the price management system, giving locales and enterprises a certain jurisdiction over price fluctuations for second and third category agricultural by-products, changing the uniform list price to a multiple price system. Agricultural departments should have the right to participate in farm product price regulation and management. It was recommended that the price administration might annually, depending on the situation, meet with agriculture departments, commercial departments, economic theoreticians and farmer representatives to discuss procurement prices for farm products.

The farm products procurement system is one of the main vehicles for proper handling of relations between the state and farmers. Problems prevailing the farm products procurement system today are mostly the result of excessive state uniformity and over regulation, blocking of flow channels, seriously bureaucratic business practices, and overly high basic procurement figures for grain and economic crops in some areas, etc. Prevailing methods put farmers in a position of no authority, seriously dampening farmers' enthusiasm. Consequently, the comrades recommended: (1) Change in the prevailing unified procurement and requisition procurement methods, which rely primarily on administrative methods to get agricultural by-products, to a procurement contract system that mostly uses economic methods and is gradually built on a foundation of equality and mutual benefit and exchange at equal value. For the present, a procurement method that sets procurement base figures on a contract system may be adopted. Base figures can generally be based on average figures for the past 3 years and guaranteed not to change for 5 years. The setting of base figures or signing of contracts should be done in joint consultation with commercial departments and production departments, and documents signed should have the force of law. When they are violated, the violator should be responsible for the aggrieved parties economic losses. Negotiated procurement should be expanded in the gradual elimination of unified procurement and requisition procurement. (2) Opening of a larger number of commercial changes in a change away from the single dealer system. In actual practice, in today's China there are three economic components (the state, the collective, and the individual), so there should be three corresponding channels of flow. The Supply and Marketing Cooperative could be changed to the second State Ministry of Commerce, state farm and commerce, and commune and brigade collective commerce organizations being separately set up, clearly stipulating that they are all integral parts of socialist commerce, and that they should enjoy the same treatment in prices, tax revenues, award sales, and subsidies as state commerce. Strengthen rural market direction, and development of goods exchange by individual commune members for common advancement of prosperity in the rural economy.

How to adapt general methods to specific situations to establish an equitable agricultural production structure is a problem that has not been solved for a long time. On the basis of survey data, survey teams from 11 counties conducted a category by category comparison, noting that the main problems existing in the agricultural structure are one-sided emphasis on development of grain production, disregard of concrete conditions, arbitrarily increasing multiple cropping indeces, elbowing aside economic crops, placing agriculture in a position of opposition to forestry, livestock raising, sideline occupations, and fisheries, ignoring diversification, and creating serious imbalances between use and nurture of land, the workforce and seasonality of work, the ecology and the environment. In addition to studying the problems of standards for making sensible China's agricultural structure, the symposium also focused on discussion of how properly to handle the problem of the relationship between grain and diversification. Comrades put forward the following several views: (1) Grain is the most important commodity, and its output must be increased year by year in order to assure the needs of the people's livelihood and development of the national economy. However, the error of sole emphasis on grain to the neglect of diversification has to be overcome, and while maintaining the ecological balance, equitable arrangements have to be made for agricultural, forestry, livestock raising, sideline occupation and fishery production. In different areas, different ratios should be set for the growing of grain and economic crops, accentuating strengths and playing down weaknesses to win bumper harvest. For example, Liaocheng Prefecture in Shandong Province appropriately expanded its cotton growing area in 1980 to win increased earnings, expanding its investment in grainfields to gain bumper harvests of both grain and cotton. (2) Emphasis must be placed on increasing per unit yields of grain crops. Everyone acknowledged that the lower the yields of an area, the greater the potential for increases, and they recommended increased support for low yield areas. (3) Need for further implementation of policies, and effectively solving the situation of "grow grain and suffer loss; the more grown the greater the loss." There can be a further readjustment of the comparative prices of grain and other crops, and suitable reductions in the uniform procurement quotas in high output grain areas. Both the state and localities can institute subsidies or offer award sales of low priced industrial goods for commodity grain. Profits from commune and brigade industries may be used for internal subsidization of grain production. So long as they assure fulfillment of state quotas, grain growing areas and economic crop growing areas should be permitted, of their own free will and for mutual benefit, and in the interest of exchanges of what one has for what one does not have, to sign contracts to exchange some goods. Everyone particularly noted that agriculture is the foundation of the national economy, and that national economic planning must be done on the basis of agricultural, light industry, and heavy industry priorities so that the national economy can develop rationally and harmoniously.

Relationships among the state, the collective, and individuals have to be correctly handled. A look at the relation between the state and the peasants shows that the main problem today is state withdrawal from agriculture of too much for accumulation, and too little funds given to support agriculture. The tax on agriculture is a general 3 to 7 percent, and it becomes less each year. Nevertheless, the peasants say, "Do not fear what is openly asked for; just fear what is taken by stealth." As stated above, as a result of the price scissors between industrial and agricultural products, the state annually takes about 30 billion yuan from the peasants for accumulation, or about eight times the agricultural tax. This amounts to one-third of national revenues. On the other hand the accumulated total of state support funds to agriculture between 1952 and 1977 was 140.7 billion yuan, or 10.7 percent of total state fiscal disbursements, and an annual average of 4.2 billion yuan. A look at the distribution of earnings between the collective and the individual shows great accumulation and little consumption. In Wu County, Jiangxi Province, for example, the proportional distribution in 1965 was as follows: tax revenues 8 percent, collective accumulations 14 percent, commune member consumption 78 percent. By 1979, it was tax revenues 8.5 percent, collective accumulations 31.2 percent, and commune member consumption 60.3 percent for a 17.2 percent increase in collective accumulations and a 17.7 percent decline in commune member consumption. A fairly conspicuous problems in relationships among the three at present is the excessive burden borne by the peasants. A 1980 survey conducted in Jiading County showed 10 expenses of various kinds collected from the peasants totaling more than 8 million yuan, for a per capita average of more than 20 yuan. At the Yutian Commune in Taoyuan County, between 1976 and 1978, the county, or the district, or the commune, or the production brigades egalitarianly and indiscriminately used 63 different pretexts for taking 777,000 manhours of work from the production teams there, totaling 32 percent of the total amount of work done for a per capita burden of 42 yuan. The peasants said, "Nowadays the peasants burdens are like carrying rice straw on a rainy day; the longer carried, the heavier it gets." It is hoped that the Central Committee will make a check and strictly define which burdens are to be borne by the state and which are to be borne by the peasants instead of heaping burdens of various kinds on the heads of the peasants.

Integrated agricultural, industrial and commercial operations are a measure of strategic significance for China's economic development. China has a large population and a relatively small amount of useable land. Through sole reliance on the soil, the peasants will find it difficult to become prosperous. For the past several years at Malu Commune in Jiading County, Shanghai, grain yields have averaged 1,760 jin per mu annually, and cotton yields have averaged 105 jin per mu. However, of the average per capita distribution of 367 yuan in 1980, only 80 yuan derived from agriculture. Therefore, we must broaden the avenues of production and institute integrated agricultural, industrial, and commercial operations so as to be able to make the rural economy boom. Since the Third Plenary Session of the 11th Party Central Committee, China has test operated quite a few combined agricultural, industrial, and commercial enterprises. Practice has shown that they have played a great role in the rational organization of production, making arrangements for excess workforces in rural villages, and in raising funds for agricultural production. However, owing to contradictions in the present economic system, difficulties are very great. The comrades recommended: (1) The State Council might convene a national integrated agricultural, industrial, and commercial work conference, bringing in relevant units for participation to jointly formulate a document on integrated agricultural, industrial, and commercial operations, and to make some formulations on basic problems so everyone would have a guide to follow. (2) Establishment from the central to the local levels of leadership units for integrated agricultural, industrial, and commercial operations for coordination of the views of all sectors, and for unified leadership.

The modernization of agriculture is the overall goal of all agricultural economics work. China possesses abundant natural resources and a copious supply of labor; however, people are numerous relative to arable land; accumulated resources are scant; and scientific, technological, and cultural levels are backward. How to proceed from the realities as they exist in China today to the building of a Chinese style modernized agriculture is a major problem requiring earnest study. Following discussion, everyone acknowledged: (1) The need to institute an equitable agricultural development strategy. There is a need to base ourselves on 1.5 billion mu of cultivated land and also to have a vision of 14.4 billion mu of land. Of China's present farmland, 23 percent is high yield fields, 44 percent are average fields, and 33 percent are low yield fields. If only we will rely on policies and rely on science, the potential for increased output from 1.5 billion mu is still very great. Furthermore, if we are able to sensibly use 14.4 billion mu of land, we can greatly increase China's agricultural by-products and hasten progress toward the modernization of agriculture. (2) Vigorous development of agriculture's commodity production is a key in hastening China's agricultural modernization. In 1980, the national commodity rate for agricultural products was 32.1 percent, the net commodity rate for grain being 13.7 percent. Through development of commodity production, it will be possible to hasten China's agricultural specialization, and socialization, promote economic accounting, and increase the labor productivity rate. (3) Arousal of the enthusiasm of scientists and technicians, hastening the training of scientists and technicians, and raising of the cultural and scientific and technical levels of the broad masses of peasants, and intensification of the work of promoting agricultural techniques. (4) Use of the system and of policies to assure all around development of agriculture, forestry, livestock raising, sideline occupations, and fisheries. On the one hand it is necessary to respect the self-determination of the peasants, and on the other hand the state has to give vigorous support with capital and materials. In the course of the discussions, some comrades suggested that agricultural mechanization and the bringing of all farmland under irrigation is still necessary, but that economic accounting has to be implemented and arrangements for these things done rationally on the basis of capabilities. As regards the influence on agricultural modernization of contracting for production with individual households and contracting jobs with individual households, some comrades believed that for the present, these will slow the mechanization of agriculture and water conservancy construction. However, "double contracting" has promoted development of agricultural production, so from a long range viewpoint, they will hasten agricultural mechanization and the bringing of all farmland under irrigation as well as accelerate the speed of agricultural modernization.

9432
CSO: 4007/78

NPC DEPUTIES SUPPORT TREE-PLANTING DRIVE

OW090745 Beijing XINHUA in English 0725 GMT 9 Dec 81

[Text] Beijing, December 9 (XINHUA)--Ma Shoushan, a 66 year-old forester of Hui Nationality, was especially elated at the proposal for a nationwide voluntary tree-planting drive made by the State Council to the National People's Congress.

Attending the current N.P.C. session as a deputy, he is director of a forest farm covering 460 hectares in the Ningxia Hui Autonomous Region, which has large desert areas. In the past 20 years, he has led his workers in planting 800,000 trees on a 7.5 kilometer section of sandy and pebbly bank of the Yellow River in the region. The tree-belts successfully protected farmland from floods this summer.

Ma Xin, (Hui Nationality), chairman of the regional people's government, is also a deputy. He told XINHUA that Ningxia should plant trees on 1.2 million hectares of barren hills and arid land. The forest cover of the region now stands at only 2.5 percent.

This year state and collective farms have afforested 20,000 hectares of land and people have planted 40 million trees in various places in the region, Ma Xin said.

"The proposed drive will give further impetus to afforestation in our region," he said.

Professor Wang Binsheng, president of Land Reclamation Academy of the Xinjiang Uygur Autonomous Region, said China had only 12.7 percent forest cover, which was far too low compared with other advanced countries in the world.

The agronomist has worked nearly 30 years in Xinjiang, which has the largest deserts in China. He said that since the beginning of land reclamation in Xinjiang in the 1950's, great attention had been given to planting trees to protect farmland, and nowadays shelterbelts crisscrossed 200 reclamation farms, protecting one million hectares of cropland.

CSO: 4020/50

BRIEFS

FUJIAN PREFECTURE LATE RICE--Fujian's Putian Prefecture reaped a bumper harvest of late rice crop. Per mu yield of its 990,000 mu reached 654 jin, an increase of 28 jin over that of last year. [OW121425 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 8 Dec 81]

JIANYANG PREFECTURE GRAIN--Fujian's Jianyang Prefecture reaped a bumper agricultural harvest this year despite natural disasters, with total grain output expected to exceed 2.58 billion jin, topping last year's figure by more than 100 million jin. The per-mu yield increased by more than 30 jin. Pucheng County reaped a good harvest from its more than 250,000 mu of single-cropping late rice, with total output increasing by nearly 20 percent. The per-mu yield from Shaowu County's 84,000 mu of single-cropping late rice reached 674 jin this year, up 38 percent. The total output from the prefecture's more than 2 million mu of double-cropping late rice increased by more than 50 million jin. By the end of October, the prefecture had procured 525 million jin of train, topping the same period last year by more than 30 million jin [OW131353 Fuzhou FUJIAN RIBAO in Chinese 28 Nov 81 p 1]

CSO: 4007/129

FARM DEVELOPMENT PROGRAM FOR HEILONGGANG REGION PROPOSED

Shijiazhuang HEBEI RIBAO in Chinese 2 Nov 81 p 2

[Article by Hou Xueyu [0186 1331 3558], Botony Institute, Chinese Academy of Sciences: "How to Make the Most of the Heilonggang Area's Natural Advantages for Rapid Development of Large Scale Agriculture"]

> [Text] Editor's Note: In response to invitations from the Provincial CCP Committee, the Provincial Science Commission, and the Provincial Science and Technology Association, during late June and early July this year, Comrade Hou Xueyu, in the company of scientists and technicians from Hebei Province, made an inspection of more than 10 counties in Hengshui and Cangzhou prefectures. In this article, which he has written, he has provided for our further correct appreciation of the Heilonggang area's advantages scientific data and very good views for rapid development of large scale agriculture in this region through readjustment of the internal structure of agriculture, and reforming the farming system on the basis of natural laws and economic laws to play up strengths and play down weaknesses. The original article was fairly long, so this newspaper has abridged it for publication here.

Natural Advantages for Development of Large Scale Agriculture in the Heilonggang Region

In order to make the most of advantages, one must, first of all, understand those advantages. What are the natural advantages of the Heilonggang region for development of large scale agriculture?

An understanding of the region's natural advantages requires more than sweeping statements about whether the soil or climate are good or bad. One must relate such things to particular agricultural crops or economic trees. The same climate may be a good climate for certain plants and a bad climate for other plants. The same kind of soil may be thin for wheat or corn, but fertile for some other kind of plant. Similarly, we cannot sweepingly say that a given crop or a given variety is high yield or low yield. One must relate yields to specific conditions. The same kind of crops or varieties may be high yield crops or varieties under certain conditions, but change the conditions and they may become low crops or varieties.

Consequently, in evaluating the advantages and disadvantages, the strengths and the weaknesses of the Heilonggang region, one must use the aforestated dialectic conception as a basis. Only through the use of such a conception for analysis of a region's weather, soil, people, and crop strengths or weaknesses can one be able to build up strengths and play down weakeneses to make the most of advantages for rapid development of large scale agriculture.

(1) Disadvantagous Elements for Grain Production in the Heilonggang Region

The Heilonggang region has always been notorious for droughts, waterlogging, and alkalinity, and some of it is a sandy waste. In terms of the province as a whole, its grain yields per unit of area are relatively low, Annual rainfall in this region amounts to only between 500 and 600 millimeters, 70 percent of it being concentrated during the summer months of July and August. The spring and early summer seasons are ordinarily dry, but the region is prone to waterlogging during the summer season. Most waterlogging disasters occur in low-lying areas, while drought occurs principally in hilly regions. During April, this region frequently has hot dry winds, which impair the growth and development of wheat, or, more seriously, may lead to the death of the wheat. These are the disadvantageous climatic elements. The mother material in the soil of this region contains pumice and salts carried in from upstream, and when this mother material is close to the surface of the soil, it forms an aged saline-alkaline soil. In addition, because of the depressions in the terrain, the underground water table is fairly high. When spring drought and high winds are added to this condition, evaporation at the soil surface becomes great. The salt-bearing underground water moves upward through capillaries to the soil surface where a secondary saline crust may be formed.

In addition to the aforementioned effects of drought, waterlogging and salinity, there are other reasons also for the low grain yields in the Heilonggang region. As a result of the emphasis for the past 20 years or so on an increase in multiple cropping indices and the blind advocacy of two crops in a single year, one of wheat and one of corn, with continuous cropping rather than rotational cropping, the wheat growing area has been excessively large. The farming system incorporating use of the soil and nurture of the soil has been ignored, and pulses, peanuts, and cotton, as well as drought and waterlogging-resistant and saline-alkaline tolerant spring millet, and spring gaoliang have been squeezed out. Also squeezed out has been some early maturing crops that have a short growing season, are tolerant of drought, and require little fertilizer. As a result, a fair amount of soil fertility has been depleted, and as a result of almost half of the cultivated area receiving no organic fertilizer, but only chemical fertilizer, the soil has become hard and stiff. Because the fertilizer contains large amounts of nitrogen but lacks phosphate, the nitrogen cannot be used to full advantage. This is still another important reason for the low yields in this region.

(2) Natural Advantages for Development of Large Scale Agriculture in the Heilonggang Region

While analyzing the aforementioned disadvantageous elements, we should also look at this region's advantages in weather, soil, people, and crops.

(1) Seasons in Which Plenty of Water, Heat, and Light are Combined

The characteristics of such a climate are advantageous to the growth of numerous economic crops and fruit trees. This region is one of the country's principal areas for the growth of cotton, peanuts, and sugarbeets. In addition, the quality of watermelons and of deciduous tree and vine fruits such as red dates, grapes, peaches, and pears is especially good, because during the period of their vigorous growth, local temperatures are high, quantity of rainfall copious, sunlight ample, and the difference between daytime and nighttime temperatures great. Under daytime conditions of suitably high heat and strong sunlight, photosynthesis can be carried on to the full to produce carbohydrates. Evenings, when temperatures are relatively low, respiration relative weak, and consumption slight, great accumulation of sugar can take place. Furthemmore, during summer when a lot of rain falls during the growing season, many salts are washed out of the soil, reducing crop damage caused by salts.

Though autumn rains may sometimes cause flood disasters in this region, it is also a region favorable for the sowing of wheat. When rainfall comes only in August and October the first year, and in March the second year, a wheat harvest during the second year can be assured. The high temperatures, scant rainfall, and strong solar radiation at the time the wheat ripens are also advantageous for the formation of starches. Therefore, since ancient times this region has been a wheat growing area. These are the advantageous aspect of the climate. In addition, so long as fall harvested crops such as corn, soybeans, peanuts, cotton, sesame, and gaoliang are seeded in furrows and planted in trenches, are planted sufficiently late so as to avoid the worst of the dry season, even with the summer drought, high yields in the fall may be assured.

(2) Soil Advantages

The soil in this region is extremely complicated. The lianghe soil [0357 0678 0960] in hilly areas is suitable for the growing of wheat and corn, but large expanses of saline-alkaline soil and a certain amount of sandy soil are low yield areas for wheat and corn. However, the saline-alkaline soil in which grain crops grow poorly is, conversely, good soil for growing certain grasses and woody economic plants. Golden streaked small dates will grow normally in clay soils with a pH of 9.0 and a 0.3 to 0.4 percent salt content, and will produce bumber harvests consistently in both years of waterlogging and drought. For example, 2 out of 3 years are dry in Cangzhou Prefecture, yet the fluctuation in output of small dates is small. In 1963 a particularly large flood disaster occured, but the golden streaked small dates maintained output nevertheless. If 20 date trees per mu are planted, given only half care about 300 jin of dates can be produced for a value of 100 yuan. With better care, 500 jin can be produced. Furthermore, the trees have a long life, trees several hundred years old continuing to bear. The masses praise them as a "sure-fire high yield crop."

False indigo [Amorpha fruiticosa L] also grows quite well in the saline-alkaline soil of this region, even managing to grow in soil that is fairly saline and alkaline. It also perfoms a function in improving saline-alkaline soil. Chemical analysis shows that its leaves contain nitrogen, phosphate, and potash, which make them a very good green manure or cattle fodder. The stems and leaves of alfalfa flourish in saline-alkaline soil, and alfalfa covers the ground well, reducing evaporation from the soil. Its roots go deep, also playing a role in improving saline soil. Furthermore, alfalfa is, in itself, a very good green manure and a cattle feed fairly rich in nutrients. Sunflowers tolerate salinity and tolerate drought when grown in saline-alkaline soil, producing yields of between 100 nad 200 jin per mu, several times more than wheat produces when grown on the same soil.

Hongjing [4767 5427] is a natural economic crops that grows on heavily saline-alkaline soil. Its stems can be woven into baskets, or used as a light industry raw material. Hongjing produces yields of from 600 to 1,000 jin per mu. Figuring a value of .05 yuan per jin, this amounts to from 30 to 50 yuan per mu, the income derived from between 250 and 400 jin of corn. Saline-alkaline soil is also suitalbe for growing perennial shadawang [3097 2092 2489] (diding [0966 0002)], biennial sweet clover and annual sesbania. These are all alkaline-tolerant superior pulse feeds and green manures that both improve the soil and can be rotationally cropped as grass and grain. Additionally, Sudan grass (hezi [0678 1311] can also be grown in saline-alkaline soil. Nutrients are very high in these aforementioned posture grasses, and provide a material foundation for development of a livestock industry in alkaline-saline regions. The aforementioned economic plants, however, do not grow well in the acidic red soils of the semi-tropical and tropical southern parts of China. In addition, some of the pasture grasses, green manures, and fruit trees such as sesbania, Sudan grass and red dates do not grow well in the saline-alkaline soils of China's northeast and the Nei Monggol Plain because temperatures there are insufficient. Therefore, as advantages of Heilonggang, these livestock fodders, green manures, and economic crops are inseparable from the saline-alkaline soil and climate there. Thus, saline-alkaline soils are low yield soils for corn and wheat, but are high yield soils for hongjing, golden streaked small dates, false indigo, and alfalfa.

This region has some sandy soil. Sandy soil is the basic soil for oil-bearing crops such as peanuts and soybeans, and it also produces boji [4684 4614] willows and white wax stems [bailatiao - 4101 5866 2742], raw materials for plaited items. The sandlands are also this region's forestry base, and are suited for afforestation particularly with grapes and date trees. Growing of watermelons is also appropriate. In the sandy soil, watermelons yield at a rate of between 6,000 and 7,000 jin per mu. If each jin is calculated at a value of .10 yuan, this means earnings of from 600 to 700 yuan per mu. This is an advantage. Were the sandy soil to be planted to wheat or corn, both water and fertilizer would drain away, and growth would be poor. In this region, there are many low-lying slots and the underground water table is high. There is much marshy soil. False indigo and sesbania are tolerant of waterlogging, and in some low-lying areas rushes, which have very high economic value, cnn be grown. Rushes may be used both as livestock fodder and as a raw material for plaiting mats.

(3) Traditional Mass Experiences

For a long time, the masses in the Heilonggang region have created diverse farming systems to use and nurture the soil. In the control of saline-alkaline soil, they have used drains and ditches and they have built terraced fields as ingenious means of planting to avoid salinity. To combat drought, they have sunk shallow wells for irrigation, have bred numerous drought resistant crop varieties, and have used seasonal planting arrangements to readjust the planting of crop varieties. In a situation in which virtually every year brings dry hot winds, they have built forest networks around their fields. The masses in this region have also bred numerous superior varieties of economic plants, such as Cangzhou golden streaked small dates, ya [7700] pears in areas crisscrossed by rivers, Gucheng watermelons, Shenxian honey peaches, etc. The experiences and creations of these working people should be regarded as a treasure for the Heilonggang region.

Several Strategic Problems in Development of Large Scale Agriculture in the Heilonggang Region

(1) Adoption of a progrmm of Reduction in the Grain Growing Area, Intensive Farming, and Increasing Per Unit of Area Yields.

Development of large scale agriculuure by no means requires neglect of wheat and corn porduction. Not only should there be no relaxation in this production, it should be given more intense attention. The problem lies in how to give more attention. Formerly much emphasis was given to expansion of the grain growing area and increasing the multiple cropping index. Analysis of the Heilonggang region's soil and climatic conditions shows, however, that neither of these two roads can be traveled. Only adoption of a sensible crop pattern and intensive farming to increase per unit grain yields will do. This means an appropriate reduction in the grain growing area, devoting some low-lying fields to development of diversification in pulseses and pasture grasses, green manure and cotton as economic crops and for the growing of fruit trees and development of forestry, using limited water and manure on grain fields that produce high yields, thereby greatly increasing total grain output as well.

Why propose such a plan?

First because adaptation of general methods to local situations can make the most advantage of different soils. This regions's soil types are very complicated. There are both soils that are fairly well in terms of water and fertility, and large areas of saline-alkaline soil, low-lying soil, and sandy soil. Wheat and corn have fairly great requirements for water and fertility, and they will not tolerate salinity or alkalinity. If they are planted in saline-alkaline soil, yields will be less than 100 jin per mu. However, if saline-alkaline soils are used to grow sunflowers or gaoliang, both of which are crops fairly tolerant of salinity, fairly high yields and earnings may be obtained.

Second is use of barren land to develop economic diversification. Heilonggnng has large areas of saline-alkaline wastelands, as for example Xian County, where there is 150,000 mu of saline-alkaline land that will not grow crops. Haixing County also has 500,000 to 600,000 mu of grassy lowland and saline-alkaline wasteland. These wastelands are not suited to reclamation. In Gucheng County, for example, the hongjing has cut down on 20,000 mu of heavily saline-alkaline soil, wheat being planted instead. As a result the grain did not grow, and the former hongjing stalks, worth 30 to 50 yuan per mu, were lost as well. The Liying Production Brigade in Qing County has 5,000 mu of saline-alkaline wasteland on which it grows false indigo, getting more than 2,000 jin per mu of false indigo stalks. Yet when wheat and corn is grown, the harvest is less than the seeds originally planted.

Third is the possibility of avoiding natural drought and flood disasters for consistent grain output. In order to reduce the damage done to agricultural production by drought and flood disasters, proper reduction in the wheat and corn growing area and establishment of consistently high yield fields that meet high standards is completely necessary. In low-lying areas, tall stalk gaoliang, which is both drought resistant and tolerant of waterlogging, may be planted. On saline-alkaline soil, dates and grain or false indigo and grain may be intercropped for a harvest no matter whether drought or waterlogging occurs. In order to beat both spring drought and early summer drought, a certain amount of autumn-harvested crops may be grown.

Four is possibilities for concentrating water and fertilizer use to increase benefits from water and fertilizer. Lack of water and fertility are the main reasons for the Heilonggong region's low yields. Were the grainfield area appropriately reduced, and some crops that are saving on water and fertilizer such as pulses, pasture grasses, green manure, sunflowers, and such economic crops being planted instead on the soil that is not suited to the growing of grain, the water and fertilizer saved thereby could be used on the main fields, benefits from water and fertilizer being greatly increased. A survey has shown that counties, communes, and brigades that have put such a program into effect have obtained remarkable results. In order to expand its grain growing area, for the past 25 years Qing Connty has engaged in large scale capital construction of farmland for an accumulated investment of 140 million yuan and several hundred million man days of labor. It also increased applications of chemical fertilizer and promoted superior plant varieties. Nevertheless, per unit grain yields throughout the county never averaged more than 200 jin per mu, and the county's total output did not exceed 200 million jin. However they accumulated a debt for a total of 200 million jin of grain bought from the state at uniform prices for consumption their amounting to 38.66 million yuan. In order to turn around this situation of wide planting and thin harvests, the County CCP Committee reduced the grain growing area, promoted the "three field farming system," using one-third of the grainfields that had been widely planted only to yield thin harvests to set up consistently high yield grain fields through concentration of fertilizer water, and manpower on them. Another third of the area was used to grow peanuts, sunflowers, sesame, watermelons, and such economic crops, and on the final third the growing of wheat was rotated with the growing of green manure for a combination of use and nurture of the land. Though grainfield area in the county in 1979 was 80,000 mu less than in 1976, yields per unit of area increased by 114 jin. Total grain output increased by 68,810,000 jin, and income from industrial sideline occupations and economic diversification increased more than threefold. In 1971, Jiangqian Brigade in Jing County grew grain crops on an area of 1,200 mu for yields of less than 100 jin per mu. Each year they consumed 20,000 jin of grain purchased from the state at a uniform price. After 1971, they cut back the grain growing area to 600 mu, doing intensive farming, providing meticulous care, and expanding the growing of alfalfa to 700 mu, and by 1979 grain yields amounted to 800 jin per mu, and total output was 560,000 jin, a five to six fold increase over the time when they planted widely for thin harvests. Each household provided the state an average 4,166 jin of grain, and alfalfa worth about 10,000 yuan was sold each year. Along with development of economc diversification, peasant income increased, or conversely could be used to promote increased grain production.

9432
CSO: 4007/100

BUMPER COTTON, GRAIN HARVESTS IN WUQIAO COUNTY REPORTED

Shijiazhuang HEBEI RIBAO in Chinese 28 Oct 81 p 1

[Article: "Great Bumper Cotton Harvest in Wuqiao Overfulfills State Purchase Quotas. "Double Contracting" System of Responsibility Shows Its Might; Readjustment of Pattern of Agriculture Yields Great Fruits. Total Cotton Output Predicted at 16 Million Jin for a 30 Percent Increase Over Last Year. Despite Reduction in Grain Growing Area, Total Output Increases. Large Numbers of "Excelling Households" Providing 1,000 Jin of Cotton or 5,000 Jin of Grain in Excess of Quota Emerge"]

[Excerpts] This year Wuqiao County, which instituted a "double contracting " system of responsibility, had a great bumper harvest. As of 26 October, the province's commune members had sold to the state 6.6 million jin of ginned cotton, overfulfilling state procurement quotas. Cotton picking and sales to the state are still at a high level in all communes and brigades. As soon as dawn breaks, long lines form, people throng, and a bustle of activity takes place in front of all cotton purchasing depots and stations. In the course of a day, between 30 and 40 thousand jin of cotton are purchased. County departments concerned predict a total output value for cotton this year of 16 million jin, a 30 percent increase over last year.

This year Wuqiao County made further sensible readjustment of its agricultural patterns, the grain growing area being reduced by 40,000 mu from last year. Cotton growing quota was set at 160,000 mu, but, in fact, each commune and brigade planted a little more than this. Because commune members prospered as a result of last year's bumper cotton harvest, investment in the land increased. In consequence, per unit grain yields this year showed general increase, and total grain output for the year is expected to be 14 percent higher than last, for a double bumper harvest in both cotton and grain. Communes and brigades have already substantially fulfilled the county's 13 million jin state grain procurement quota.

The double bumper harvest in cotton and grain demonstrates the tremendous might of systems of responsibility for production. All of the 1,271 production teams in this county instituted systems of responsibility of contracting production with individual households and contracting jobs with individual households and contracting jobs with individual households this year. Suddenly cotton changed from being the "stepchild" it was during the former period of eating out of a "large common pot" to a "born child." Once the lunar new year had passed, commune members went to the fields for which they were responsible to rake and roll to preserve moisture.

Where seedlings had not come up in a full stand, they checked row by row, replacing them. When no rainfall fell, irrigation was promptly done to add moisture to the soil. Between the time of planting and harvesting, hoeing was done 6 or 7 times, or as much as more than 10 times, and insect pests were also promptly controlled. This year the wheat was planted quickly, and the cotton was also picked on time. In the cotton fields there was no "dropped cotton," or "eyelashes" [4190 4208 3029]. In the cotton sold to the state, impurities were few and quality was high.

The great bumper cotton harvest further strengthened the collective economy and increased commune member earnings. From cotton alone, the county realized increased earnings of more than 8 million yuan, an average of 40 yuan per person. From last year's average per capita income of 115.50 yuan for the county, this year's income may rise to more than 160 yuan. In every commune and brigade has emerged a large number of units that have made double contributions in cotton and grain, and "excelling households," that have sold 5,000 jin of grain or 1,000 jin of ginned cotton in excess of quota. Ginned cotton sold by the Fantun Commune amounted to 79 jin per mu, and per capita earnings may climb from last year's 184 yuan to 250 yuan.

9432
CSO: 4007/98

HEBEI

SUCCESS REPORTED IN EXPERIMENTS ON MAXIMUM BEARING TIME FOR FRUIT TREES

Beijing GUANGMING RIBAO in Chinese 10 Nov 81 p 2

[Article by correspondent Chen Yichao [7115 0001 6389]: "Changli Fruit Tree Institute in Hebei Province Combines Production and Research To Make Contribution To Advance of Province's Fruit Output"]

[Excerpts] The Changli Fruit Tree Research Institute of the Hebei Provincial Academy of Forestry Science has achieved heartening results in efforts directed against problems in fruit tree production, undertaking experimental research at research bases set up in ya [1700] pear, apple, Chinese chestnut, date, and walnut growing areas. From the more than 4.8 million mu of fruit trees in the province, total output last year amounted to more than 1.68 billion jin, 12 times the output of the period immediately following Liberation. From 1.06 million mu of apples trees, output totaled 350 million jin, taking fourth place in the country. From 840,000 mu of pear trees, output totaled more than 700 million jin, first place in the country. This year production conditions in fruit producing areas are very good, and an increase in output over last year is in prospect. The Changli Fruit Tree Institute made a contribution in increasing the quantity and quality of fruit production in the province.

Hebei Province has more than 30 million apple trees of which more than 70 percent are young trees less than 10 years old. They bear fruit late; yields are low; and the masses derive benefit only slowly. In 1976, this institute sent scientists and technicians to set up a research site at the Xiaosuozhuang Production Brigade in Chapeng Commune, Funing County, where they launched scientific research on early bearing and early bumper yields from young trees. This production brigade once had more than 5,000 young apple trees, but the masses cut down more than 1,000 of them because they did not bear fruit. They selected more than 600 9-year-old trees from the remaining 4,000, applying multiple care techniques to them, and getting bumper harvests every year. This year output totaled more than 250,000 jin, a 24-fold increase over 1976 for yields averaging more than 7,600 jin per mu. To the newly close planted 6-year-old bumper harvest orchard, scientific care measures were also applied, and last year yields averaged 2,500 jin per mu, advancing the onset of heavy fruit harvests of the past by 7 to 10 years. This year, the brigade's fruit output will total more than 800,000 jin. The Xiaosuozhuang Production Brigade has become an advanced unit in the province, the prefecture, and the county.

In addition the research sites for Chinese chestnuts, small dates, and for the prevention and control of a disease of dates that causes uncontrolled growth, and rust diseases in fruits in Qianxi, Xianxian, Chengde, and Yutian counties have also won accomplishments during the past few years.

9432
CSO: 4007/98

BRIEFS

COUNTY FIELD MANAGEMENT--By the end of November, Jiangsu's Wujiang County had topdressed more than 49,000 mu of its more than 300,000 mu of wheat, barley and naked barley. It has preserved soil moisture on more than 20,000 mu and prevented aphid damage on more than 45,000 mu. [OW131353 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 81]

JIANGSU PREFECTURE AGRICULTURE--Jiangsu's Yancheng Prefecture has reaped a bumper agricultural harvest this year, with total output of grain, cotton and oil-bearing crops topping the previous peaks. Grain output has exceeded 5.15 billion jin, up 150 million jin compared with last year's output. The amount of cotton procured topped the previous peak by 300,000 dan. In Sheyang County, grain and cotton output topped last year's figures by more than 10 percent and more than 50 percent respectively. [OW131353 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 81]

JIANGSU COUNTRY AGRICULTURE--Jiangsu' Suqian County has reaped a bumper agricultural harvest with grain output exceeding 170 million jin, topping last year's figure by more than 10 million jin. Income from agriculture and sideline production has reached 140 million yuan, topping last year's figure by 17.5 percent. This year the county increased acreage of cotton, rape, peanuts, mulberry and other cash crops by more than 250,000 mu. [OW121252 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 9 Dec 81]

CSO: 4007/129

INSTITUTE OF ANIMAL HUSBANDRY SUCCESSES, ONGOING PROJECTS DESCRIBED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 9, Sep 81 pp 28, 25

[Article by Wang Ruilin [3769 3843 2651]: "Institute of Animal Husbandry, Chinese Academy of Sciences"]

[Excerpts] The Institute of Animal Husbandry of the Chinese Academy of Sciences is located at Malianwa, Haidian District, Beijing. It is a national animal husbandry research institution. This institute is concerned primarily with applied techniques in the study of livestock. In view of the key scientific and technical problems urgently in need of solution for development of the national economy and for livestock industry porduction, the institute has launched thoroughgoing and fairly long range, strongly theoretical research. It has accepted major research tasks handed down by the state, organized national cooperation on matters pertaining to the institute's research, and has undertaken academic exchanges both inside and outside the country to train animal husbandry scientists and technicians and has steadily provided new techniques, new theories and new accomplishments applicable to animal husbandry to promote development of China's livestock industry.

The institute was founded in 1957, transferred to the countryside in 1970, and restored and reconstituted at its original location in 1979.

The institute has eight research offices for livestock and poultry varieties, feeds and fodders, livestock and poultry nutrition, livestock reproduction, livestock genetics, raising of cows, raising of hogs, and raising of chickens. Scientists and technicians currently number 120, more than 70 percent of them being mainstay research cadres. There are more than 10 senior researchers, and research students in the three specialities of livestock and poultry nutrition, livestock propagation, and livestock genetics and breeding.

Prinicpal research accomplishments during recent years have been:

1. Comprehensive scientific and technical research on collective hog raising using mixed feeds, "limited" feeding of sows during their gestation period, developing economic hybridization, institution of weaning of shoats, breeding in the same stys, and fattening of burcher hogs in " a continuous process," which has remarkable increased the slaughter rate and economic benefits. The institute was honored with a National Science Conference award in 1978.

2. A book titled, "Hog and Chicken Feed Ingredients and Nutritional Value Tables," systematically gathers together both domestic and foreign experimental data on feeds and on hog and chicken digestive metabolism. Using mathematical statistics a preliminary evaluation was made of hog digestive abilities and protein digestion, and chicken metabolistic capability norms. After checking and sifting of the final manuscript by a specialized coordination team, this data was published. The tables provide scientific data on the formation of nutritional standards, and for scientific compounding of full value feeds for China's hogs, the institute receiving a citation second class for technical advancement from the Ministry of Agriculture for this work in 1979.

3. In 1980, transplantation of frozen sheep embryos was successfully carried out. This was a major breakthrough in livestock breeding, and in propagation techniques and low temperature biological research for China; it filled a deficiency for China.

4. In the field of research on improving the conception rate in sheep from frozen semen, the conception rate over a 3 year period has increased to more than 50 percent and an expansion of experiments is currently underway.

5. Research on the trace element content of livestock and poultry feeds and their organic effect on livestock and poultry have progressed very rapidly. A survey of feeds in Qinghai Province and the selenium content of pasture grasses there has been completed, and a distribution map for the entire province has been produced.

Work currently in progress includes: Survey of livestock and poultry varieties, and research on characteristics of germ plasm; introduction to cultivation and use of pasture grass fodder crops; quantity of nutrition required by hogs and chickens, and evaluation of values of feeds; research on trace elements in feeds; hybrid combinations to increase sow fecundity and lean meat commodity hogs; research on bull selection methods; preservation and transplantation of frozen embryos of cattle and sheep, and increasing the conception rate from frozen semen for sheep.

9432
CSO: 4007/96

BRIEFS

HESHUN COUNTY FALL SOWING--Faced with a new situation and new problems in fall farming following implementation of systems of responsibility, the Heshun CCP Committee strengthened leadership and took tailored action so that this year's fall farming would be done both quickly and well. As of the end of October, more than 196,900 mu amounting to 75.4 percent of the total cultivated land, had been cultivated. The remaining more than 6,400 mu of land not yet cultivated is being cultivated at a daily rate of about 10,000 mu per day, and will be entirely finished before 7 November. In early October, the county CCP committee transferred and organized 334 cadres from the county and commune level to go into the rural front line to take control over both fall harvesting and fall cultivation. County party and government leadership cadres contracted with communes; commune cadres contracted tracts; county and commune cadres in the countryside contracted with brigades, and brigade cadres contracted machines, draft animals, and implements, setting quotas, individual responsibilities, and time limits for completion. Ninety-five percent of the draft animals and tools in the county, and 86 percent of the tractors were put into autumn cultivation. Most communes and brigades instituted systems of responsibility for fall planting, receiving rewards for completion and sustaining penalties for failure of completion. Tractors were passed from one person to another without stopping for a great acceleration in the pace of machine cultivation. Brigades in communes that had promptly organized completion of all cultivation transferred machines and implements and draft animals to brigades in which duties were heavy to help with fall cultivation, receiving remuneration for it. As a result of use of the aforementioned measures, the pace of autumn cultivation throughout the county was greatly accelerated. [Excerpts] [Taiyuan SHANXI RIBAO in Chinese 1 Nov 81 p 1] 9432

DOUBLING OF SUGARBEET OUTPUT--As a result of the implementation of systems of responsibility for production and various other economic policies pertaining to the procurement of sugarbeets, and institution of joint plant-commune operations, it is estimated that total output of sugarbeets in the province this year may reach 170,000 tons, more than double last year's amount and a 30 percent increase over the all time high record year of 1969. This will provide the province's sugar refineries with ample raw materials. The Datong Sugar Refinery, which every year for the past 20 years has not had sufficient raw materials, will purchase 140,000 tons of sugarbeets this year. This is substantially sufficient to satisfy production needs. Right now, the refinery is urgently engaged in preparatory work prior to starting up the machinery. Machinery start-up will be 10 days earlier than last year. In order to assure smooth production at the Datong Sugar Refinery, the Datong Thermal Electric Power Plant, the water compant and railroad and highwary transportation units and departments are also actively coordinating their vigorous support. [Text] [Taiyuan SHANXI RIBAO in Chinese 2 Nov 81 p 1] 9432

CSO: 4007/98

BRIEFS

HECHUAN COUNTRY GRAIN PRODUCTION--Although Hechuan County suffered an unexpected and exceptionally large flood, its grain production this year increased as usual enabling it to have a bumper crop for the fifth running year. According to the statistics of the county statistical bureau, the total grain output for the county is 3.2 percent greater than last year. An exceptionally devastating flood which may occur once in a hundred years hit Hechuan County for a 10-day period in mid-July and inundated 160,000 mu of farmland. After this disaster the county, on the foundation of implementing various forms of production responsibility systems such as assigning output quotas to individual able-bodied laborers, fixing output quotas based on households and having peasant households assume full responsibility for task completion, further relaxed restrictive policies. Furthermore, the masses gave enthusiastic support and production increased vigorously. The autumn sowing was quickly and successfully accomplished. Throughout the county at every level the party, government organizations and a vast number of cadres provided for and helped organizations by engaging in production. It was the inhabitants of the disaster region who suffered through the difficulty together and struggled shoulder to shoulder to accomplish a great part of the hard and arduous work. [Excerpt] [Chengdu SICHUAN RIBAO in Chinese 7 Nov 81 p 1]

CSO: 4007/125

YUNNAN

INCREASED PROCUREMENT OF THIRD QUALITY FARM PRODUCTS URGED

Kunming YUNNAN RIBAO in Chinese 23 Oct 81 p 1

[Article: "Enhance Procurement of Third Grade Agricultural Byproducts"]

[Text] The year conditions for grain production and economic diversifiaction are very good throughout the province. A new situation has also emerged in procurement of agricultural byproducts. The pace of procurement quickens with each passing month; a tremendous increase has taken place over the same period last year in monetary value of procurement; and some prefectures and a group of counties have already overfulfilled agricultural byproduct procurement plans for the whole year. However, in the procurement of agricultural byproducts, a decrease has occurred in purchases of third grade products. In some prefectures, a decline on varieties procured amounting to 30 or 40 percent as compared with last year has taken place. Monetary value of procurement of third grade products has declined by more than 10 million yuan throughout the province. If total value of tobacco leaf procurement is eliminated, the total value of other products procured has declined by 2.03 percent as compared with the same period last year. If procurement price rises for some varieties are also eliminated, the monetary value of third grade goods procurement will have declined even more. This problem merits serious attention by all jurisdictions. Leadership should be strengthened and cadres should be sent into fairly weak areas and units to help with work there to reverse with all possible speed the situation of a decline in procurement of third grade agricultural byproducts

Third grade agricultural byproducts are in important part of national wealth. Numerous industrial raw materials, export goods and non-staple foods derive from third grade agricultural byproducts. Inasmuch as both third grade agricultural byproducts and "minor fall harvest" products are very seasonal, unless their collection and procurement is promptly organized, losses that cannot be readily made up will result. Therefore, organization of third grade agricultural byproduct procurement is an extremely important current task for supply and marketing cooperatives at all levels. One of the major reasons for the decline in procurement of third grade agricultural byproducts is the pursuit of increased amounts of money and more prizes on the part of some areas and enterprises. As a result, leaders, and staff and workers at all echelons of supply and marketing cooperatives must adhere to socialist orientation, correct their thoughts about doing business, and follow the principles of making overall plans with consideration being given to all factors and making all around arrangements, giving attention both to staple products and not relaxing on procurement of third grade minor products. In order to encourage enthusiasm in enterprises and among staff and employees for dealing in third grade agricultural byproducts, at the time when each jurisdiction institutes a system of economic responsibility, kinds and quantities of third category products to be procured should be specifically stipulated, and quantities procured should be linked to monetary rewards. The extent of rewards can be somewhat large, but those who ignore third grade minor products procurement or fail to fulfill prescribed varieties or amounts, must be economically penalized. At the same time, supply and marketing cooperatives everywhere must begin at once to diligently analyze dealings in third grade agricultural by-products, checking how many varities were handled in the past, the amount of precent decline, the reasons therefore and what actions should be urgently taken. All products produced by the peasants that are needed in the market and that also meet specified quality requirements should be procured. In cases where the market for certain items is temporarily sluggish, caution should be exercised and a suitable amount accumulated, all levels of companies performing the function of a storage battery. Vigorous attention must be given to sales work, using sales to promote procurement. For some products, processing will be required to make them useful for new purposes. In short, one should not take the mistaken action of halting procurement.

9432
CSO: 4007/99

YUNNAN

INS, OUTS OF WHEAT GROWING IN YUNNAN SURVEYED

Kunming YUNNAN RIBAO in Chinese 28 Oct 81 p 3

[Article by He Zhaoxing [0735 0340 5281]: "Yunnan Wheat"]

[Text] In Yunnan with its "three dimensional climate," wheat is grown from more than 3,000 meters above sea level to around only 300 meters above sea level. Wheat's broad distribution and strong adaptability are qualities numerous grain crops do not have. Wheat is one of the most ancient grain crops, and research on its classification system is also fairly complete. In terms of form characteristics, no less than 20 varieties in the world have been named, but the ones for which cultivation is most widespread and which possess most wideranging significance in production are common wheat and durham wheat. Second comes club wheat and poulard wheat. It has been ascertained that China grows six varieties of wheat, common wheat being the preponderant one and accounting for more than 96 percent of the wheat grown. Study and observations shows the wheat grown in Yunnan to be the four "cousins", common wheat, poulard wheat, club wheat, and durham wheat, common wheat accounting for 85 percent, club wheat accounting for about 8 percent, poulard wheat accounting for about 7 percent, and durham wheat amounting to an extremely small amount of the wheat grown. Very clearly common wheat plays a leading role in Yunnan's wheat production, and China's unique "Yunnan wheat subspecies" make Yunnan's numerous regional wheat varieties even more varied, a matter of major significance for research into the propagation, the origins, the evolution, and the classification of wheat. As a result of long term natural selection and selection by man of the abundant and diverse local varieties that correspond to "weather that differs every 10 li" in Yunnan, these local varieties are suited to planting under numerous and varied production conditions. Their resistances are strong, their resistance to drought and cold particularly so; quality is also good, and they are a valuable material for the breeding of superior wheat varieties that produce high yields, are of superior quality, ripen early, and are resistant to diseases.

Wheat is Yunnan's major winter crop. In area sown and total output, it holds third place among the province's grain crops after rice and corn. Its speed of development since liberation has been much greater than that of either rice or corn, and the area sown has more than doubled, total output more than tripling. A group of communes having yields of 600 jin per mu, brigades having yields of 700 jin per mu, production teams having 800 jin per mu, and bumper yield plots having more than 1,000 jin per mu have emerged.

Nevertheless, in terms of the province as a whole, low yields per unit of area are a common problem in Yunnan's wheat production. This is particularly so for dryland wheat, which occupies more than 60 percent of the wheat growing area. The difference in per unit yields from one area to another is also very great. In 1979, somewhat more than 80,000 mu in Dali County produced yields averaging 511 jin per unit of area, while average yields per unit of area for the province as a whole have never broken 200 jin. Very clearly, Yunnan's potential for increased wheat yields is great. Scientists point out that in addition to the disadvantageous conditions of serious winter and spring dryness, slapdash cultivation and care are major reasons for low wheat yields per unit of area. Consequently while continuing adaptation of general methods to local situations in the breeding and spread of superior varieties, expansion of the irrigated area, earnest attention to various intensive farming methods, vigorous extension of high yield farming techniques, and efforts in scientific planting and care of wheat will certainly change the situation of low wheat yields per unit of area.

9432
CSO: 4007/99

BRIEFS

FARM PRODUCT PURCHASE INCREASES--As of the end of September, purchases of agricultural byproducts by Yunnan Province's supply and marketing system totaled 358 million yuan for a 44.3 percent increase over the same period last year. More than 155 million yuan of this total was purchsed during September for an all time record for that month. The continued increase in September purchases is attributed primarily to the advantageous conditions for agricultural byproduct procurement created by bumper harvests. Production of flue cured tobacco, wood fungus, soap fats, castor beans, and black pepper have overfulfilled annual plan. Fairly substantial increases have also taken place in quantities purchased of dry chilli peppers, industrial greases, walnuts, bamboo shoots, raw lacquer, and coire fiber. As of the end of September, Qujing and Yuqi prefectures and the 22 counties of Funing, Yongshan, Guangnan, Xiaguan, Mouding, Luliang, Xiangyun, Yuqi, Xinping, Yaoan, Yongren, Yiliang, Lu'nan, Luoping, Lufeng, Jiangchuan, Chengjiang, Tonghai, Huaning, Shizong, Chongming, and Midu had fulfilled agricultural byproduct procurement plans for the whole year. [Text] [Kunming YUNNAN RIBAO in Chinese 23 Oct 81 p 1] 9432

CSO: 4007/99

GREATER EMPHASIS ON OCEAN FISH, SHRIMP HATCHING URGED

Hangzhou ZHEJIANG RIBAO in Chinese 27 Oct 81 p 1

[Article: "Strive for Appreciable Development in Ocean Hatcheries Within 3 to 5 Years. Strengthen Leadership to Put Development of Ocean Hatcheries in an Extremely Important Position. Provincial Ocean Hatcheries Conference Calls Upon All Echelons of Party and Government in Coastal Areas to Make Solid Achievements"]

[Excerpts] Bright prospects exist for development of ocean hatcheries in Zhejiang Province, and there is need to continue to give them strict attention to produce greater achievements. This is a requirement that the recently convened Provincial Ocean Hatcheries Conference put forward for all jurisdictions. The conference acknowledged that his year's implementation by communes and brigades in coastal areas of the province of a program of "a combination of catching fish and raising fish, with the emphasis on the fishing industry, in diversification for all around development" has brought new expansion in ocean hatchery production. The ocean hatchery area in the province amounts to more than 633,000 mu, an increase over last year of more than 60 percent. Output of ocean fish hatcheries during the first half of the year was 351,000 dan, a 20 percent increase over the same period last year. However, looked at in terms of aquatic products output for the entire province, ocean hatchery production remains a weak link, both output and output value occupying a very small proportion of the ocean fishing industry. Throughout the province, about 90 percent of ocean shallows where fish hatching could be done has not been put to use, and the potential for development of ocean hatching is still very great. In order to bring about a substantial increase in ocean hatchery production during the next 3 to 5 years, the conference called upon all jurisdictions to further increase their understanding of the importance of developing ocean fish hatching. Under present circumstances in which capabilities to catch ocean fish greatly exceed the amount of ocean resources available, development of ocean hatcheries is the major way to increase aquatic products, and it is also a major component in the development of diversification by coastal fishing and farming villages. All echelons of CCP committees and government must effect a substantial change in their guiding thoughts about development of the ocean fishing, they must place ocean hatching in an extremely important position. The principal hatching prefecture and country governments, and aquatic products administrative attention to hatching, and the major communes should also have someone undertake this responsibility.

The conference acknowledged that on the issue of product sales, the former stifling uniformity would have to be changed. Except for prawns, fish hatchery output consists of three kinds of products. By not instituting requisition procurement, but rather instituting only negotiated procurement and negotiated marketing, production units can handle matters themselves, effecting direct contact for sales of product. For products that producing units experience difficulties in handling by themselves, aquatic product supply and marketing units at all echelons should, in a spirit of support to hatchery production, actively help clear marketing channels, organize direct contact between producers and marketers, and arrange for people to transport, market and process. Inasmuch as hatchery products are mostly fresh products, the masses should be stimulated to start up various kinds of processing to preserve freshness, making full use of existing cold storage plant potential, and doing more packing in small containers of products for cold storage. For kelp and laver, close coordination should be effected between scientific and technical forces and producing units for processing and multiple uses. All units concerned should help solve problems in cold storage vehicles and cold storage boats in an enhancement of storage and transportation of hatchery products to satisfy market supply. Fry are the foundation for development of hatchery production, and Zhejiang Province currently has a severe shortage of fry, which impairs development of ocean hatching. All places should use a combination of natural propagation and artificial propagation of fry in an effort to use every possible means to solve the problem. All echelons of aquatic product research units should make the spread of technology an important task. All sorts of training classes should be operated to increase the specialized knowledge and technical competence of hatchery personnel, making ready for a training of all hatchery technical main stay cadres once during the next year or two.

9432
CSO: 4007/96

ZHEJIANG

BRIEFS

DEVELOPMENT OF FOODSTUFF INDUSTRY--Commune and brigade foodstuff industries in Zhejiang Province have focused on development of four major categories of products namely, tea processing, sugar refining, beverages and dried fruits, vegetables, pastries, aquatic products, meats, dairy products, processing of edible fungi, and brewing. They intend that by 1985 commune and brigade foodstuff industry total output value will be more than double this year's. In order to realize this development plan, they have called upon communes and brigades in all jurisdictions to give attention to production of various kinds of products. While assuring fulfillment of state quotas, they are to give attention to planting, raising and processing as a coordinated process, and to production, supply, and marketing as a coordinated process so that the processing industries will be founded on a firm foundation of raw materials, and on a foundation of smoothly operating marketing channels. At the same time, it is necessary to vigorously launch coordination among cities inside and outside the province, communes and brigades, and commune member households, and strive to increase output of popular food products, of nutritious foodstuffs, and of traditional foods of various kinds needed by the people in cities and the countryside. This plan was put forward at the recent Provincial Commune and Brigade Food Industry Conference held under the auspices of the Provincial Commune and Brigade Enterprises Bureau at Jinhua. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 2 Nov 81 p 1] 9432

AGRICULTURAL BANK LOANS--In accordance with the program of national economic readjustment, the Bank of Agriculture and credit cooperatives at all levels in the province have issued a total of 890 million yuan in loans during the first three quarters of this year to support commune and brigade enterprises increase their output of consumption goods for daily use. Throughout the year, Bank of Agriculture and credit cooperative cadres from everywhere have gone into commune and brigade enterprises to inspect and study. They ranked more than 20,000 enterprises, after which they acted on the basis of a program of supporting the best, giving active loan support to those enterprises having a source of raw materials, assured energy sources, and markets for their goods, to increase consumption goods for daily use needed by markets and in the daily lives of the people. Between January and September, the Bank of Agriculture and credit cooperatives in Shaoxing City issued an accumulated total of 61.58 million yuan in loans to commune and brigade light and textile industries, more than double the sum for the same period last year, to promote expansion of commune and brigade light and textile industries. As of the end of September, the output value of light and textile industries in that city amounted to 254, 950,000 yuan, or 81 percent of total output value. By way of support for development of commune and brigade enterprises in

Taizhou, Lishui, and Jinhua prefectures during the first three quarters of this year, the Bank of Agriculture and credit cooperatives issued a total of 240 million yuan in loans in these prefectures to support the development through the adaptation of general methods to local situations of the farming industry, the hatching industry, processing industries for agricultural byproducts, and the building materials industry. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 18 Oct 81 p 1] 9432

CSO: 4007/96

PUBLICATIONS

TABLE OF CONTENTS OF 'ZHONGGUO XUMU ZAZHI' NO 4, 1981

Tianjin ZHONGGUO XUMU ZAZHI [CHINESE JOURNAL OF ANIMAL SCIENCE] in Chinese No 4, 5 Oct 81 inside back cover

[Text] Study on the Relationship between β-Lactoglobulin Polymorphism and the Productive Performance of the Cow...... Qin Zhirui [4440 1807 6904] and Bai Hong [4101 5725], both of the Heilongjiang Institute of Animal Husbandry (1)

The Application of Remote Sensing on Grassland Resource Survey......Jia Shenxiu [6328 1957 0208], Xia Jingxin [1115 2529 2450], both of the Department of Animal Husbandry, Beijing Agricultural University; Chen Moxun [7115 6206 6104], Grasslands Institute, Chinese Academy of Agricultural Sciences (2)

The Application of Cross-over Design in Animal Production Experiments......Yu Weijiang [0205 6182 3068], He Yushu [6320 3768 2579], both of the Guizhou Agricultural College; Cui Yuzhen [1508 3768 3791], Tarim Agricultural Reclamation University, Xinjiang (7)

Study on Utilization of Heterosis by Using Erhualian Sow as the Basic Parental Generation......Zhang Shunhe, et al. (9)

The Development of the Body and the Digestive Organs of Peking Ducks under Different Feeding Levels......Wang Zhusan [3769 2691 0005], Liu Minxiong [0491 2404 7160] and Li Kunying [2621 3824 3841], all of the Department of Veterinary Medicine, Beijing Agricultural University (11)

The Relation between the Inseminating Time of the Mare and the Sex of Its Pony......Qi Yixin [7871 5030 0207], Animal Husbandry and Veterinary Medicine Research Institute, Shandong Academy of Agricultural Sciences (12)

Study on the Conception Rate of Sheep with Deep Frozen Semen ......Wang Liming [3769 4539 6900], Zeng Peijian [2582 1014 1017] and Feng Keming [7458 0344 2494], all of the Animal Husbandry and Veterinary Medicine Research Institute, Xinjiang Academy of Agricultural Reclamation Sciences (14)

Feeding Piglets with Non-colostrum Artificial Sucking Substitute......Zhao Xianrui, et al. (17)

Induced Estrus Synchronization in Cows Treated with Prostaglandin Analog Plus Estradiol Benzoate......Zhao Xinfa (19)

Test on Freezing Centrifuged Boar Semen......Ge Miao (21)

Study on Technology of Freezing Boar Semen......Xi'an Animal Husbandry and Veterinary Station (22)

Study on Factors Affecting Fertility in Dairy Cows...... Wang Yuanxing [3769 0337 5281], Shen Jiasen [3088 1367 2773], Dai Xingting [2071 2622 1656] and Lin Quanzeng [2651 0356 2582], all of the Zhongshan Dairy Farm, Nanjing (26)

Spreading AI Technique to Raise the Conception Rate and Litter Size of the Sow......Chen Wanming, et al. (29)

Test for Estrous Ewe in Small Groups at Night......Li Yingxin (30)

Study of Classification System of the Chinese Horse Breeds ......Wang Tiequan [3769 6993 2938], Institute of Animal Husbandry, Chinese Academy of Agricultural Sciences (30)

Some Problems with the Technical Policy of Rabbit Raising in China......Ren Zhenhe [0117 2182 3109], Zhangjiakou Agricultural Specialty School, Hebei (31)

Pig Industry in Denmark......Huang Zhong [7806 1813], Department of Animal Husbandry, Beijing Agricultural University (36)

A New Method of Ear-marking for Pigs......Jing Fulin, et al. (40)

Book Review: "Statistic Genetics"......written by Alan Robertson, translated by Yang Da (back cover)

9717
CSO: 4007/113

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 8, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese No 8, Aug 81 inside front cover

[Text] Study on the Installation of Herringbone Concrete Engineering at the Bottom Slope of Raft Flume......Li Bogong [2621 0130 1872], Fujian Forestry Survey and Design Institute (1)

A Preliminary Report on the Self-made Instrument for Measuring Road Curve...... (3)

Discussions on the Determination of Rational Loads for Wood Transporting Truck...... (5)

A New Automatically-controlled Device for Sorting Logs...... (7)

Analysis and Prevention of Loosening of the Pinion Bearing Seat on the Final Speed Reducer of Dongfanghong 54/75 Bulldozer...... (8)

Several Methods for Cold Starting of GJ85 Chain Saw under Severe Cold...... (9)

Test of Cold-setting Adhesive...... (10)

Use of the Process of Fiberboard Mat Charging into Hot Press...... (11)

Method of Determination for the Solid Content, Curing Speed and Pot Life of Urea-formaldehyde Resin......Li Lanting [2621 5695 0080], Northeast Forestry College (13)

New Type of Air-filled Roll Feeder...... (15)

Use of Granite for the Lining of Superheated Steam Kiln...... (17)

Selection of Parameter for Saw Teeth Form...... (21)

Two Kinds of Bundling Log Devices Used for Trucks...... (23)

Yarding Test for the Cable Way with Three Support Points...... (25)

The Productivity of Skidders...... (26)

Research and Production of Oriented Particleboard in Foreign Countries...... (30)

9717
CSO: 4007/116

PUBLICATIONS

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 9, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese No 9, 15 Sep 81 inside back cover

[Text] Sealing Performance of Pneumatic Device...... (1)

Successful Trial-manufacture of Synthetic Resin Brake Shoes......Hong Haitao [3163 3189 3447], Sanchazi Forestry Bureau, Jilin (2)

On Slip Control of the Machines for Lifting Logs Out of the Water...... (3)

The Calculation of Static Tension Force in the Round Arc Sections of the Machine for Lifting Longitudinal Logs Out of the Water...... (5)

The Application of Image Map in the Technological Design of Felling Areas...... (6)

The Theoretical Calculation of Transporting Weed Trees with Rubber Pontoon......Qi Jitang [7359 3444 2768], Nanjing College of Industrial Processing of Forestry Products (7)

Choice of the Universal Joint of Forest Machines...... (9)

Preliminary Study on the Process of Wireless Hot Pressing in the Wet Method of Fiberboard Production...... (10)

Study and Use of MJX-200 Chip-N-Saw...... (14)

Determination of the Dry Matter Content of the Urea-formaldehyde Resin Liquid with Diffraction Meter...... (17)

Improvement of the Installation for Sealing Rings of the Hot Press Cylinder...... (18)

Improvement of the Mechanical Control Apparatus for the Head Blocks of Band-saw Carriage...... (19)

Development of Balloon Yarding in Foreign Countries...... (20)

Studies on How to Further Improve Mechanized Felling Device...... (22)

Improving the Mounting Operation of Cableways for Wood Yarding...... (24)

A Brief Account of the V 34-DB Veneer Slicer Made in Japan ...... (26)

Research and Production of Oriented Particleboard in Foreign Countries...... (28)

9717
CSO: 4007/126

FIVE MEASURES OUTLINED FOR CHINA'S AGRICULTURAL DEVELOPMENT

Hong Kong TA KUNG PAO in Chinese 8 Nov 81 p 1

[Article by Zhan Wu [6124 2976], Director, Agricultural Economics Institute, Chinese Academy of Social Sciences: "How Should China Develop Its Agriculture?"]

> [Text] [Editor's Note:] "Some reports from Beijing tell of convening during the month of the National People's Congress to discuss the issue of reform of the people's communes. At a time when agricultural and economic experts are giving serious attention to how China's agriculture should be modernized and to avoiding the tortuous road of the past, the present article presents a comprehensive analysis of China's agricultural development strategy from which can be seen the concern of China's scholars about future development of agriculture.

The former erroneous leftist policies with their unvarying economic composition and unvarying farming methods were one of the major reasons why China's agriculture was unable to develop rapidly. In a recent major symposium at which the director of the Agricultural Economics Institute of the Chinese Academy of Social Sciences, Zhan Wu, conducted a comprehensive analysis of China's strategy for agricultural development, he noted that the damage caused by unvaried policies was not slight. He also noted at the same time that the building of a structure in which collective ownership predominated, that was economiclly diversified, that had diverse forms of farming, and in which numerous systems of responsibility coexisted was a major measure in the implementation of China's strategy for agricultural development.

Currently, academicians in China have launched a fierce debate on the question of strategy for development of agriculture. Zhan Wu has put forward his initial thoughts to assure that the goals of China's agricultural development strategy will be realized.

Zhan Wu proposed five major measures to implement China's strategy for agricultural development as follows:

Permit the Peasants Themselves to Select the Farming System

Devise a long term stable strategy in which the collective economy is the dominant body, while at the same time actively develop state farms, and household sideline occupations, and permit the existence and development of individual farm industry under certain conditions. This possesses major significance in the strategy for development of agriculture. Moreover, it is necessary as well to respect the ownership and right to self-determination in operations of the collective economy, allowing the peasants themselves to freely select farming methods, allowing horizontal diverse economic federation, and permitting diverse forms to co-exist. Not only is the long term co-existence of the publicly owned economy and household sideline occupations inevitable, they can be interrelated and mutually advancing. Household sideline occupations are capable of playing a major role that the publicly owned economy cannot take the place of, and the ratio of household sideline industries in agriculture must be increased.

In a discussion of foreign economies, Zhan Wu noted that there are three different economies in the Soviet Union and the various countries of eastern Europe. There is the economy in which the state economy is dominant (the USSR); the one in which the collective economy predominates (Hungary), and the one in which the individual economy predominates (Poland). Experience has shown that the results have been quite good in Hungary's collectively dominated economy.

Building a Fine Agricultural Ecological System

Real use of the ecological balance concept to guide all agriculture (including farming, forestry, animal husbandry and fisheries), with gradual change from a vicious cycle to a benign cycle. Looked at in long range terms, this is a route requiring little investment for fairly great results. A program of overall simultaneous development of farming, forestry, animal husbandry, sideline occupations and fisheries must be carried out. In the planting industry, a plundering style of farming must be thoroughly rooted out and the principle of a combination of use and nurture of the land using sensible rotation of crops instituted. Serious attention should be given at the same time to a combination of modern scientific techniques and traditional agriculture, and a combination of organic agriculture and inorganic agriculture. In this way, China's agricultural development will be able to walk the road of low expenditures, low cost, and high benefits.

At the present time, China's forest cover rate is less than 50 percent of the world average. It will take a great deal of effort if China is to increase its forest cover rate from the present 12.7 percent to between 20 and 30 percent by the year 2000. The key problem at the moment is to make the building of firewood forests and rapidly growing timber forests the main focus in order to solve the needs of the peasants for fuel and the people's need for lumber. This would be a breakthrough in stopping the vicious cycle. An effective way to hasten afforestation would be to adopt specialized contracting, including having specialized households afforest and look after the forests. Barren mountains that neither the state nor the collective is able to shoulder may be distributed to commune members as privately held mountains, and myriad households stimulated to afforest them.

As a result of overgrazing and lack of attention to building of grasslands, almost half of China's grasslands have degenerated. From now on, the amount of grazing should be strictly regulated, and either a system of responsibility for grasslands established, or individually retained grasslands designated.

Raising of fish and planting of water chestnuts should be done in reservoirs to help use water to nurture water.

Coastal and fresh water fishery resources have been damaged to an astounding degree. For a rather long time to come, the only outlet for the fishing industry will be artificial hatcheries in a combination of raising fish and fishing with the raising of fish dominating. No fishing seasons and area prohibited to fishing will have to be established to protect the coastal fishing industry.

Establishment of Rural Systems of Economic Management

While maintaining steady increase in total grain output, gradually increase the ratio of economic crops, of forestry the livestock industry, sideline occupations, fishery industry, and industry, commerce and transportation industry in terms of output value, area, and assignment of manpower. This should be done in order to build a rural agricultural economy structure in which grain and economic crops, farming and forestry, animal husbandry, sideline occupations, and fisheries are closely related, and in which agriculture, industry, commerce, and transportation see all around development.

During 1979 and 1980, a reduction in grainfield area amounting to more than 60 million mu took place. The grainfields were converted to the growing of economic crops or returned to forests. Despite this, food output reached an all-time high since the founding of the People's Republic. This shows that the aforestationed program is completely workable.

Use of the mutually promoting role of farming and forestry, animal husbandry, sideline occupations and fisheries to hasten agricultural development, particularly of forestry, livestock raising, sideline occupations, fisheries and other economic diversification. Integrated operation of the production, processing, sale, and transportation of agricultural products is, in essence, a change in the piecemeal and disjointed, irrational management system. Revival of the inherent dialectic relationship of these sectors of the rural economy is a strategic measure in making equitable the rural economic structure and the management system.

Illiteracy Is an Impediment to the Development of Agriculture

China's current commodity rate for agricultural products is only 30 percent, which is a far cry from the more than 90 percent of developed countries. In order to develop commodity production, it is necessary, first of all, to gradually effect regionalization, specialization, and intensive farming in the production pattern, to establish a foundation for agricultural products. Second, it is necessary to vigorously develop economic diversification and processing industries for agricultural byproducts, to foster specialized households and other unified development.

The so-called "knife and whip policy" in procurement of agricultural products--"driving with a whip" when agricultural products are insufficient, and "slashing with a knife," when they are too numerous--is a great obstacle in development of a commodity economy. This shows that reforms to the system and structure whereby commodities circulate will brook no delay. In building modernized agriculture, one cannot only talk about labor intensiveness. Of more fundamental significance is intensiveness of technology and intensiveness of scientific knowledge.

The past inattention to investment in knowledge has created serious consequences. At the present time, the cultural and scientific level and the management level of the broad masses of commune members and cadres is very low to the extent that among youths and young adults, illiteracy amounts to 30 percent. This poses great difficulties for the development of rural technical forces.

Right now, attention has to be given the elimination of illiteracy, to reforming the rural education structure and system, to strengthening secondary school technical education for peasants.

(Originally published in the 2 November issue of SHIJIE JINGJI DAOBAO [GUIDE TO WORLD ECONOMICS].

9432
CSO: 4007/102

AUTHOR: MENG Qingxi [1322 1987 0823]
YANG Qingkai [2799 1987 0418]
GAO Fenglan [7559 7685 5695]
WANG Jinling [3769 6855 7117]
et al.

ORG: MENG, YANG, GAO and WANG all of Beijing Agricultural College; et al.

TITLE: "Effect of Different Ecological Conditions on Varietal Yield Characteristics of Soybeans"

SOURCE: Harbin DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] in Chinese No 3, 10 Oct 81 pp 15-21

TEXT OF ENGLISH ABSTRACT: Ten soybean cultivars which had been released in Heilongjiang Province during different periods were tested at four different ecological localities with two seeding rates. Results of this study showed that high and stable yield of soybeans should be based upon a certain adaptable ecological type. The plant height, number of branches, number of pods on branches and length of internodes of soybeans are positively correlated with yield on alkaline and infertile soil of Anda County, and therefore soybeans with tall plants and proliferous branches are adaptable types for such ecological conditions. On the other hand, on the fertile soils of Suihua County, plant height, number of branches, number of pods on the branches and length of internodes are negatively

[Continuation of DONGBEI NONGXUEYUAN XUEBAO No 3, 10 Oct 81 pp 15-21]

correlated with yield. This shows that soybeans with medium plant height, short internodes, and more pods on the main stem are adaptable types for higher soil fertility. The shift of soybean types of commercial varieties in the Songhua and Harbin areas also reveals that there is a close relationship between cultival conditions and soybean ecotypes.

AUTHOR: HU Dianjin [5170 3013 6855]
et al.

ORG: HU of Beijing Agricultural College; et al.

TITLE: "Feed Intake and Reproductive Performance of Multiparous Min and Harbin White Sows"

SOURCE: Harbin DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] in Chinese No 3, 10 Oct 81 pp 50-58

TEXT OF ENGLISH ABSTRACT: The multiparous Min (M) and Harbin White (HW) sows were used to determine total feed consumed, weight changes, litter size at birth and weaning, litter growth rate and creep feed fed during one reproductive cycle to assess the genotype of these two breeds and their reproductive performance under a fixed feeding regime. During gestation, 6183 Kcal DE and 186.4 g of DCP were consumed by the M and 7011 Kcal and 206.8 g respectively by HW per head daily. During a 60 day lactation period, their respective DE intakes were 13435 and 15608 Kcal and 568.4 and 634.8 g. Average weight increase during the gestation period was 50.52 kg for the M and 48.63 kg for the HW. Average weight loss during the nursing period was 20.24 kg for the M and 25.10 for the HW. Under the designated feeding regime, total number of piglets born was 17.2, and number born alive 15.2 for the M; corresponding figures for HW were 13.3 and 11.5 respectively. Litter number at weaning and individual weight were 10.9 and 13.91 kg for M and 10.2 and 15.7 kg for HW.

9717
CSO: 4009/164

AUTHOR: LUO Xiaonan [5012 5135 0589]
ZHUO Wenxi [0587 2429 4406]
CHEN Darong [7115 6671 2837]

ORG: All of Fujian College of Agriculture

TITLE: "Observation of Toxicity of Several Pesticides on Parasitic Wasps of the Egg of Rice Planthoppers"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 5, 8 Oct 81 pp 24-25

ABSTRACT: Anagrus spp. is the major type of parasitic wasps of the egg of rice planthoppers and has obvious action of natural control on the damage to crops from rice planthoppers. For the purpose of harmonizing chemical control with biotic control, several pesticides commonly used in rice paddies, including carbofuran, dimethoate, sodium thiosulfate propane, chlorophenyl amidine, etc. are used in a laboratory experiment to determine the toxicity of each of these chemicals on adult wasps or on the wasp eggs inside the host egg of rice planthoppers. These chemicals are found to be extremely toxic to adult wasps (Anagrus spp.) which will die within 8 hours after contacting any of these chemicals. Toxicity of these chemicals to wasps of the parasitic state varies considerably. A mixture of sodium thiosulfate propane and dimethoate is found to be highly effective for killing planthopper eggs but not very harmful to parasitic wasp egg or the juvenile stage parasitic wasps. The experiment also includes a small area field test.

AUTHOR: LI Fengchun [2621 7364 2504]
XIE Shuixian [6200 3055 0103]

ORG: Both of Plant Protection Institute, Chinese Academy of Agricultural Sciences

TITLE: "Hydroponic Cultivation of Seedlings for the Identification of Physiological Strains of Wheat Rust Pathogens"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 5, 8 Oct 81 pp 40-42

ABSTRACT: For the purpose of identifying the 3 physiological strains of stripe, leaf, and stem rust pathogens, the method of pot culture of host wheat plants has always been adopted, with shortcomings of occupying a large greenhouse area, consuming a great deal of labor to load, unload pots with soil and move them around, and being difficult to regulate and standardize nutritional conditions. A hydroponic method of preparing a culture medium by adding 1.2 g of calcium nitrate, 0.02 g of iron oxide, etc. to 1 liter of drinking water and using it to sprout wheat seeds to be used for inoculation and identification of the 3 strains of rust pathogens is introduced. The procedure and the results are compared with the ordinary pot culture technique.

6248
CSO: 4009/134

AUTHOR: HE Manshi [0149 2581 6107]

ORG: Jinjiang Prefecture Institute of Agricultural Sciences, Fujian Province

TITLE: "Characteristics of Jinmo-2148 and Its High Yield Cultivation Technique"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 1-5

ABSTRACT: Jinmo-2148 is a product of the institute. Offsprings of hybridization of geographically distant and ecologically very different superior varieties were bred repeatedly under different conditions of soil, climate, and ecological environment of South and North China to produce this breed of large spikes,strong stems, and heavy grains. It has been extended in Fujian as well as other provinces of spring wheat to areas of 4 million mu, with yield of 4-8 hundred jin/mu. Years of cultivation through good and disastrous years have proved it to be adversity and rust resistant, highly adaptable, and easily cropped. Yield comparison with other breeds especially confirmed its high and stable yield characteristic to cause it to be regarded as one of the important standard spring wheat breeds. Its growth and development period is 140-150 days, varying with the planting time of different areas. When it is planted too late, the nutritional period may lengthen and the high temperature in the late stage may forcibly hasten ripening to reduce the yield, however. These and other special characteristics of Jinmo-2148 are introduced.

AUTHOR: ZHANG Zemin [1728 3419 3046]
ZHANG Qingyuan [1728 3237 6678]

ORG: Both of Sanming Prefecture Institute of Agricultural Sciences

TITLE: "Appraisal of Frost Mold and White Rust Diseases of Cabbage Type Rape"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 8-10

ABSTRACT: In 1980-81, the authors planted in small plots a group of 9 early ripening and a group of 9 intermediate ripening rape varieties for the purpose of grading them in accordance with their frost mold white rust disease resistance. Grade 0 means no disease; grade I disease in less than 1/3 of the branches, with a yield reduction below 30 percent; Grade II, disease in 1/3-2/3 branches or 1/3 branches and main stem, with a yield reduction of 30-50 percent; Grade III, disease in all branches or 1/3-2/3 branches and the main stem, with a yield reduction of above 50 percent; Grade IV, disease in entire plant or the plant dies, with a yield reduction of above 90 percent. Compared with the napa type rape, one breed of which was used as the control in each group, incidence of the disease was found to be 40-80 percent less. It is tentatively concluded that with the cabbage type, the root system is more developed and more absorbent, the above ground portion of the plant does not wither early, and the external waxy layer protects the plant from the mold. Possible influence of physiological and biochemical factors on disease resistance remains to be studied in the future.

AUTHOR: GUO Jinwu [6751 3160 0124]

ORG: Ningde Prefecture Agricultural Resources Company

TITLE: "Reasons of Low Yield of Vetch Seeds and the High Yield Cultivation Technique"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 11-13

ABSTRACT: Milk vetch [Astragalus sinicus] is the major winter leguminous green manure crop in Fujian,having an important position in the crop rotation system The yield of seeds is low, however, and after cropping for several years, the yield of seeds may be as low as 10-30 jin/mu. Several years of observation indicates that (1) Only about 10 percent of the 200-300 inflorescences of a vetch plant effectively become pods; (2) Blooming occurs early when the plant is less than 30 cm in height. Low seed yield of local vetch crops has made it necessary to import seeds, which are not adapted to the local temperature. Intermediate ripening breeds of Hunan 70-3 and Jiangxi Xiushui and late ripening breeds of Zhezi No 5 and Pinghu Daye, which are suitable for the climate of Fujian Province should be adopted as standard breeds for regular purification and cultivation. A series of cultivation measures are also recommended for the purpose of producing high yield of grass as well as seeds with these breeds.

AUTHOR: None

ORG: Rice Breeding Cooperative Group, Fujian Province

TITLE: "Summary Report of a 1981 Investigation of Blast Resistance of Early Rice Varieties"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 19-21, 5

ABSTRACT: In 1981, blast of rice occurred over large areas of early rice in Fujian Province. Under the leadership of the deputy chief of the Institute of Rice and Wheat of the Provincial Academy of Agricultural Sciences a team was organized to investigate the blast resistance of early rice varieties in 21 production units of 4 prefectures in the province. Results of the investigation indicate that (1) It is necessary to extend dwarf breeds to replace the tall ones and hybrids to replace the dwarf ones; (2) Blast resistance of the red series of early rice is totally lost; (3) Weather conditions encouraged large scale spreading of blast; (4) Too much nitrogen was applied in the blind pursuit of higher yield; (5) Failure of implementing comprehensive measures of prevention and control. The team suggests that disease-resistant breeds should periodically be selected for rotation or replacement, potassium should be added to nitro-fertilizer, straw should be thoroughly removed from the field, and seeds should be disinfected with either 1 percent lime or 401 solution.

AUTHOR: WU Yongqing [0702 3938 3237]
LIU Yonghao [0491 3938 6275]
ZHENG Diansong [6774 0368 2646]

ORG: WU, LIU of Fuzhou Municipal Station of Agricultural Technology; ZHENG of Gushan Commune of Fuzhou City

TITLE: "Effect of High Temperature on Blooming and Fruiting of Paddy Rice"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 29-30

ABSTRACT: During the blooming and fruiting period of paddy rice, intense light and suitable temperature are important environmental factors in high yield. With the Red 410 series and hybrids currently being extended as experimental materials, a project was carried out to observe and record the temperature, the number of inflorescences, and the rate of empty hulls after ripening to compare the damage of high temperature during the blooming and fruiting time to the subsequent yield of the various breeds studied. Results of the study indicate that some breeds can withstand high temperature better than others. The paper suggests that in Fujian Province, high temperature tolerant breeds should be preferred, blooming time should be adjusted to 35°C, in low elevation mountainous areas, a heading time of middle Jul-early Aug should be avoided, irrigating during the day and draining at night in the heading period is effective for lowering the temperature, avoiding too much nitrogen and spraying phosphorus to increase grain weight, and harvesting at a suitable time when grains are 90 percent ripe.

AUTHOR: WANG Qitian [3769 0366 3944]

ORG: Institute of Rice and Wheat, Fujian Provincial Academy of Agricultural Sciences

TITLE: "Ingenious Names of Local Paddy Rice Breeds in Fujian"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 34-35

ABSTRACT: Fujian Province is in the subtropical zone. With the sea on the southeast side and many mountains on the northwestern side, the elevations of fields have a vertical difference of 400m among the various areas of the province. Cultivation and crop repeating systems vary a great deal with the ecological conditions of these areas and numerous local paddy rice cultivars have evolved through many years of rice culture. Since the liberation, more than 6,000 cultivars have been collected and preserved and they all have very colorful names. Principles of nomenclature of the 6000+ farm cultivars are found to consist of the following: (1) Named for the place of origin; (2) Named for the growth and development period; (3) Named for the shape and characteristics of the plant; (4) Named for the characteristics of the spike; (5) Named for the special adversity resistance; (6) Named for the type of grain, such as xian, geng, starchy, glutinous, etc; (7) Named for a special precious property, such as controlling dysentery, extraordinary fragrance, etc. Names of these cultivars are, therefore, useful indicators for modern rice breeders in their collection, preservation, research and utilization projects of agricultural modernization.

AUTHOR: LU Kaichun [4151 7030 2797]

ORG: Research Institute of Fruit Trees, Fujian Provincial Academy of Agricultural Sciences

TITLE: "Developing Woody Oil Materials With All Out Efforts"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 52-53

ABSTRACT: Fujian is a province of large population and little land. Mountains take up 90 percent of the area. While oil is one of important foods of the people it is also an important raw material for industrial production. Herbaceous oil crops inevitably compete with grains and other economic crops for the limited farming acreage available in the province. The mountains of the province have a favorable climate for the development of woody oil materials, however. This paper recommends and describes the essential characteristics of the following oil-producing tree species: (1) Oil tea [Camellia meiocarpa Hu] (2) Oil olive; (3) Hazelnut tree; (4) Tung oil tree [Aleurites fordii Hemsl] (5) Chinese tallow tree [Sapium sebiferum Roxb.] (6) Walnut tree. Oil content, nutritional content, medicinal or industrial applications, suitable areas of cultivation, and cropping technique of these oil-producing trees are described.

6248
CSO: 4009/122

AUTHOR: LI Zhichao [2621 1807 6389]

ORG: Yuanping School of Agriculture, Shanxi Province

TITLE: "Strengthen Seedling Stage Management of Wheat Fields to Prevent Dead Seedlings of Overwintering Wheat"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 10, 17 Oct 81 pp 8-9

ABSTRACT: In north China dead seedlings of overwintering wheat have a serious effect on yield. In an average year, 5-10 percent of dead seedlings will reduce the yield about 10 percent. Some years, more than 30 percent of the seedlings may die and large areas of replanting may even occur. Delegates to a Jul conference on the problem in Beijing analyzed the causes to be as follows: (1) extremely low temperature; (2) prolonged low temperature even not so critically low; (3) variable temperature to cause recurrent thaw and freeze; (4) windy and little snow; (5) damage from accumulated snow or ice in the field; (6) poor ground leveling; (7) too early or too late planting; (8) improper nitrogen-phosphorus ratio; (9) unsuitable wheat breed; (10) lack or improper winter sprinkling. Following measures for preventing dead seedlings are proposed: (1) proper winter sprinkling; (2) timely light hoeing after sprinkling; (3) early winter application of fertilizer; (4) suitable banking with soil; (5) tightly pressing the surface soil; (6) keeping animals out of wheat fields. Effects and procedures of these measures are explained.

AUTHOR: CHEN Hongzhao [7115 7703 6856]

ORG: Animal Husbandry Division, Department of Agriculture and Forestry, Jiangsu Province

TITLE: "Good Results From Breeding Hybrid Porkers"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 10, 17 Oct 81 p 37

ABSTRACT: In 1980, the department organized schools, research units, and local pig breeders to carry out a carefully designed experiment with 260 sows in 24 hybridization groupings to produce 1,179 hybrid porkers to be sent to 3 stations in south, central, and north Jiangsu for experimental feeding. The porkers are slaughtered at 6,7,and 8 months of age to determine the most economically efficient procedure of hybridization and harvesting. Results of the experiment indicate that (1) Jiangsu-white is the best male to use for hybridization; (2) Taihu-pigs, especially the Erhualian breed, make the best female. (3) The most economically efficient harvesting time for Taihu pig hybrids is 6 months of age, for Jiangquhai hybrids is 7 months, for Dongchuan pigs and Shan pigs is 8 months. Feeding conditions and other related data are discussed.

6248
CSO: 4009/136

AUTHOR: ZHOU Jiachi [0719 1367 7459]

ORG: Suzhou Prefecture Institute of Agricultural Sciences, Jiangsu Province

TITLE: "Seed-saving, High-yield, and Early Maturity Culture of Paddy Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 11, 17 Nov 81 pp 10-11

ABSTRACT: Originally, with single season rice, 150-180 jin of seeds were planted per mu of seedbeds to grow enough seedlings for 7.5-9 mu of paddies, amounting to 20 jin of seeds per mu of paddies. In recent years, with improved conditions of production, fertilizer, and cropping technique, only 10-12 jin of seeds are used for one mu of paddies. About 59.2 jin/mu of seeds are used for seedbeds to cultivate strong seedlings of multiple tillers to be transplanted singly into the paddies. The new technique requires fewer number of seedlings. The contradiction between individual plants and the colony is less acute, the capital cost of seeds is considerably reduced, the plants grow stronger, and the damage by pests and diseases is milder. Practice of this technique by a large number of communes and brigades in Changshu and Wuxi Counties has proved that it does not present a problem in yield. Reduced planting and transplanting density can produce a higher yield and earlier maturity. This fact was proved by several comparative experiments reported in the paper. Attention must be given to the growth and developmental characteristics of the rice breeds and the quality of fertilizer and water management, however.

AUTHOR: QI Qingsheng [4359 1987 3932]

ORG: Beijing Municipal Research Institute of Feed Materials

TITLE: "Comments on China's Methods of Feeding Pigs"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 11, 17 Nov 81 p 29

ABSTRACT: In China, there are many varieties of pigs, feed materials, and methods of feeding. Generally speaking, the feeding techniques may be divided into 3 categories, however. (1) The same feed is given to pigs of all ages; (2) A large quantity of green and rough feed is given to pigs around the time of 35 kg in weight before changing to refined feed in the last stage; (3) Based upon the nutritional needs of the pigs, 3 types of feed materials are prepared for the first stage (20-35 kg) the middle stage (35-60 kg) and the late stage (60-90 kg.) According to an experiment carried out jointly by Institute of Animal Husbandry Chinese Academy of Agricultural Sciences and Institute of Animal Husbandry Shanghai Academy of Agricultural Sciences, the 3rd method is the best. The formulae for mixing the 3 types of feed materials for the 3 stages of growth of the pigs are described.

6248
CSO: 4009/166

Botany

AUTHOR: LIU Cunde [0491 1317 1795]
SHEN Quanguang [3088 0356 0342]
LIANG Zheng [2733 1513]
et al.

ORG: All of the Institute of Botany, Chinese Academy of Sciences

TITLE: "Effect of Oxygen and Carbon Dioxide on Isozymes of Rice and Wheat in Germinating Seeds"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 5, Sep 81 pp 364-370

TEXT OF ENGLISH ABSTRACT: The isozymes of cytochrome oxidase (COD), malate dehydrogenase (MDH), glucose-6-phosphate dehydrogenase (G6PDH), peroxidase (POD) and alcohol dehydrogenase (ADH) were measured in embryos from rice and wheat seeds germinated in atmospheres ranging from 1 to 10 percent O_2 and 5 to 25 percent CO_2.

The isozyme bands of MDH and COD decreased in atmospheres containing from 1 to 10 percent O_2, but increased for G6PDH under that lower oxygen. COD and POD isozymes decreased when the CO_2 concentration (5-25 percent) was nearer or higher than O_2 concentration (25 percent). Under that condition, MDH, G6PDH and ADH were increased. These data suggest that gene expression is regulated by internal and external factors.

AUTHOR: TAN Kehui [6223 0344 6540]
WANG Wenhong [3769 2429 1347]
HE Xiwen [0149 1585 2429]
LI Shouquan [2621 1343 0356]

ORG: All of the Laboratory of Plant Physiology, Institute of Botany, Chinese Academy of Sciences

TITLE: "Effect of Metabolic Inhibitors on Vernalization Process in Winter Wheat"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 5, Sep 81 pp 371-376

TEXT OF ENGLISH ABSTRACT: In this paper the results of the influence of various metabolic inhibitors on different periods of the vernalization process in winter wheat are provided. It was found that the initial period of vernalization is very sensitive to respiratory inhibitors, such as azide and 2, 4-nitrophenol. In the middle period, the inhibitor of nucleo-acid metabolism, such as 2-thiouracil, significantly prolonged the process of vernalization. During the third period, the protein metabolic inhibitor, such as chloromycetin, strongly inhibited the vernalization process. Our experiments demonstrated that a remarkable replacement of metabolic patterns existed during the course of vernalization of winter wheat. The relative metabolic processes during the time of vernalization not only carried on differently in rate and action model of inhibitors, but also alternatively.

[Continuation of ZHIWU XUEBAO No 5, Sep 81 pp 371-376]

Therefore, we assumed that the vernalization process of winter wheat may be divided into several periods (sub-processes) with different metabolic patterns. Based on our results, we tentatively concluded that there are at least three sub-processes during vernalization: the first sub-process is mainly determined by carbohydrate oxidation and phosphorylation processes; the second sub-process is mainly determined by nucleic acid metabolism and the third sub-process is mainly determined by protein metabolism.

9717
CSO: 4009/155

AUTHOR: CAI Xianmei [5591 0341 2734]

ORG: Agricultural Meteorology Experimental Station, Guangxi Meteorological Observation Station

TITLE: "Forecasting Time of Occurrence of Each Generation of Yellow Stem Borers of Rice Using Meteorological Factors"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 193-197

ABSTRACT: In Nanning Prefecture, 5 generations of yellow stem borers [Chilo simplex] occur in a single year. Based upon the data produced from baiting moths with lamps and meteorological information of several years, the author used the method of mathematical statistics to search for the major factors influencing the time of occurrence (early or late) of each generation of the borers for the purpose of establishing a forecasting formula for the occurrence of each generation. For the overwintering generation, the formula is $Y = 149.9 - 5.71X$. Y is the peak of occurrence of the overwintering generation; X is the effective accumulation of temperature in Feb of a daily mean of 16°C or higher in the 5cm topsoil. Similar formulae are also obtained for the other 4 generations. These formulae were applied in 1979 to predict the time of occurrence of each generation of the borers with very good results. Details of the study are reported.

AUTHOR: YAN Weixiang [3601 4850 4382]
JIANG Chenghong [5592 2110 1347]
XIANG De [0686 1795]

ORG: All of Disease and Pest Survey and Report Station, Qianyang County Bureau of Agriculture, Hunan Province

TITLE: "Condition of Occurrence of Rice Stem Miners and Investigation Into Its Prediction and Forecast"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 197-199

ABSTRACT: Before the 70's, the mountain region of Qianyang County practiced the single season rice cropping system, and stem miner (Chlorops oryzae Matsumura) was rarely discovered on rice and only under the condition of delayed planting. By 1974, the dual-season cropping system had been extended to some mountainous areas of 400-600m in elevation while the rate of damage from miners increased to 40 percent for early rice. This paper reports a study of its life history and habits. The quantity of its second generation appears to be determined by the number of rainy days and the relative humidity from middle Jun to early Jul. Effective methods for its prevention and control are only briefly discussed.

AUTHOR: ZHANG Zongbing [1728 1350 3521]

ORG: Department of Biology, Beijing University

TITLE: "Selectiveness of Pesticides (II)"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 228-230

ABSTRACT: At present, there is yet no ideally selective pesticide, while most highly efficient, low toxicity, and low residue pesticides are broadspectrum ones, such as pyrethrins. The solution to the problem of reasonable application of pesticide, especially concerning the protection of natural enemies, depends, therefore, mostly on ecological selectiveness, which includes the following measures: (1) Control of dosage: Too low a dosage may stimulate the growth of pest instead of controlling it (the Arndt-Schulz law.) To determine the most suitable dosage for a particular pest is very important. (2) Localized application: When the biological characteristics of a pest are understood, chemical pesticides may be applied to the soil, the root system, on nearby grass, etc. to control it. (3) Regulated method of application: Using granular instead of powdered chemical, mixing it with a bait etc. may reduce the damage to natural enemies. (4) Suitable application time: A most ideal time to apply pesticide must be found to produce the greatest effect on killing the pest and the least harm to its natural enemies. (5) Application of internal absorbent pesticides: They must be combined with dosage control, rotated or interspaced application, etc. to prevent them from indirectly killing natural enemies of pests.

AUTHOR: SHI Guoding [8902 0948 7844]
LI Guochu [2621 0948 2691]
CHEN Xueli [7115 1331 4409]

ORG: All of Xuzhou Prefecture Institute of Agricultural Sciences, Jiangsu Province

TITLE: "Night Vision Instrument and Its Preliminary Application in Entomological Research"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 231-232

ABSTRACT: The SGY-1 night vision instrument emits infrared ray onto a target to obtain a reflection which becomes a visible image on the instrument to be observed. In the spring and autumn of 1980 the authors used the instrument to observe the behavior of army worm leaf rollers feeding on rice, and the feeding ability of frogs. Army worms are found to be very sensitive to visible light but under infrared ray they are observed to feed on rape blossoms continuously. They are also observed to move from rape field to wheat field after midnight. These and other nighttime activities seen with the instrument are described.

6248
CSO: 4009/126 END

END OF
FICHE
DATE FILMED

Jan. 4, 1982